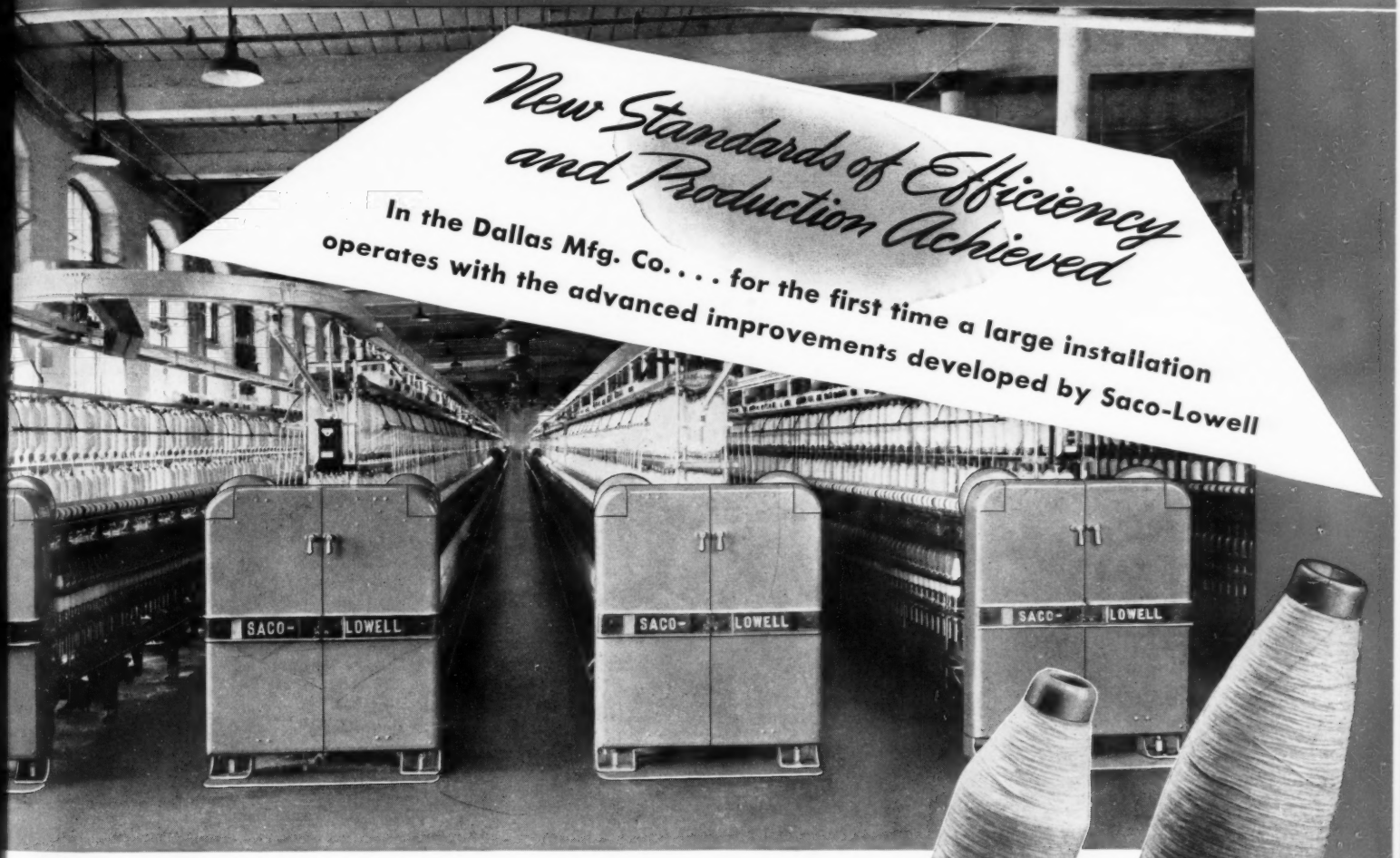
COTTON

SEPTEMBER, SERVING THE 1939

Textile Industries



New Standards of Efficiency and Production Achieved

In the Dallas Mfg. Co. . . . for the first time a large installation operates with the advanced improvements developed by Saco-Lowell

Among the contributing factors which make these new standards possible:

Saco-Lowell Wooden Sleeve Spindles with SKF Roller Bearing Bolsters

Saco-Lowell Better Draft Assembly with Anti-Friction Top Rolls and Cork Cots

Saco-Lowell Pawtucket Rings with Vitritex Finish

Geared to produce 21.5 warp yarn, these 276 spindle Model 38 frames operate with a spindle speed of 9400 rpm and uses only 9.07 H. P. . . . carry a $2\frac{1}{4}$" ring . . . and produce a bobbin weighing approx. 5 oz. In a work week of 40 hours, each spindle produces 1.6 pounds of high strength yarn of exceptional weaving quality.

This new installation at the Dallas Mills reduced spindle requirements from 20,720 to 15,456 . . . and without effecting any change in production. Like Dallas many other mills have solved difficult operating problems by installing Saco-Lowell Better Draft Spinning and other Saco-Lowell Controlled Draft Units.

To those mills handicapped with obsolete equipment, Saco-Lowell offers the services of its technical staff to assist in formulating a practical self-liquidating modernization program.

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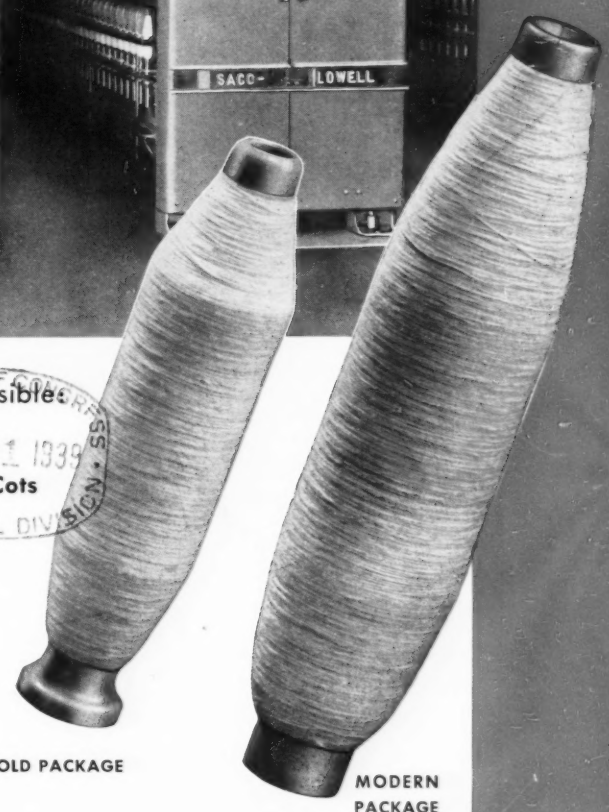
SEP 21 1939
PERIODICAL DIVISION



OLD PACKAGE

MODERN PACKAGE

THIS MODERN PACKAGE . . . carries approximately 3 times as much yarn as the old package.

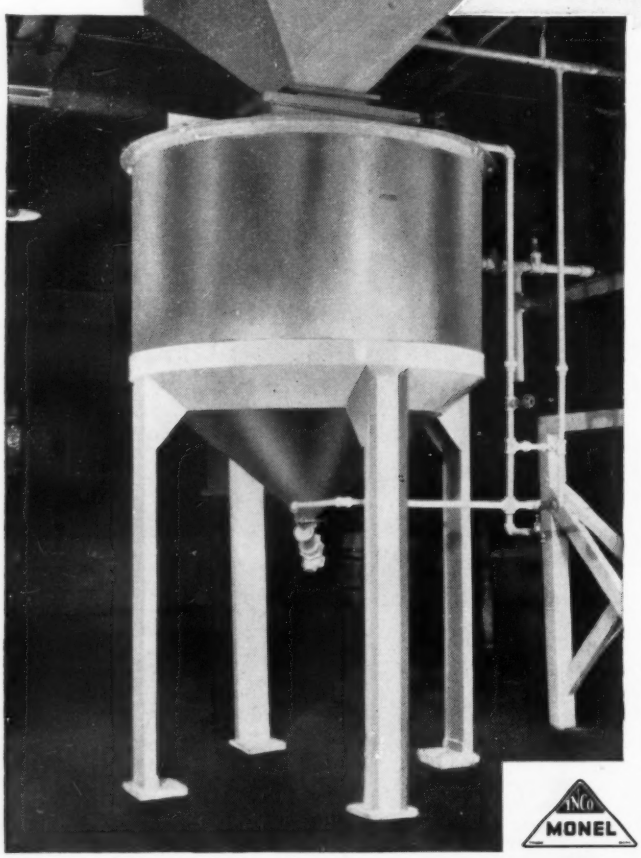
SACO-LOWELL SHOPS, 60 Batterymarch St., Boston, Mass.

FABRICS

can take it . . . but MOST METALS CAN'T

Monel rock salt dissolver unit as supplied at cost by The International Salt Co., Inc., to users of "Isco Rock Salt". Typical of those in dye plants, this unit after several years' use is as serviceable now as when installed.

Salt refiners and manufacturers, as well as users, prevent corrosion and pitting by using Monel equipment.



Corrosion-pitting by common salt, as you know, often plays havoc with dyeing equipment. How prevent this trouble? Consider how *refiners*, *producers* and *users* of salt and brines, solve this common problem:

Spiral and bucket salt conveyors, salt screening equipment, salt washing hoppers, salt dryers . . . also brine tanks and covers, brine-pump rods, nozzles and piping exposed to brine spray . . . all are subject to salt corrosion-pitting, and so are made of Monel.

What Monel does in the salt refinery and food plants it also does in the dyehouse. For example: The rock salt dissolver illustrated at left is still in use and in excellent condition, after several years of service. Furthermore, tons of Monel dyehouse equipment after years of use show no signs of corrosion-pitting by common salt.

Monel stoutly resists corrosion from dyehouse liquors, as well as from brine, and so protects yarns and fabrics from off-color effects. Tough, strong and wear resistant, this long-life metal assures years of service for equipment. Write for further information on Monel. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street **New York, N. Y.**

INCO MONEL

MONEL

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.

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Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year.
Entered as second-class matter at the Post Office, Dalton, Ga., under the Act of March 3, 1879.

The Interesting Story of Better Shuttle Friction

We are better able than ever before to furnish a Shuttle exactly suited to your Filling Yarn and Fabrics you are weaving

There is a reason—the Stroboscope

We have designed and commercially produced 7977 different kinds of Shuttles

Each of these 7977 differed from every other in some essential feature

Each was the result of your Experience and our Research as we have tried to give you better Shuttles to handle each of the many Yarn Counts and Yarn Fibres

We have followed these 7977 kinds of Shuttles into your mills and studied the results—of the failures if any developed and of the successes

In overcoming such failures as occurred we have made use of every mechanical device that might aid us in seeing what the naked eye could not detect

About three years ago we began to use the Stroboscope

At Harvard with the Stroboscope they have just taken remarkable stop-action pictures of insect wings whirring as fast as 350 times a second

With us the ability to see what happens in any ten-thousandth part of a second as we tried out the many kinds of yarn with various Shuttle Frictions gave us the facts that are Your Protection when we select the Friction for Your Shuttles

With Draper Shuttles—You Can Get

One of the New Series of Eyes we have developed for All Yarns

The New First Pick Tension in Rayon Shuttles

The New Shuttle Spring with Rubber Vibration Dampener to eliminate Spring Breakage and Loosely Held Bobbins—a Most Important Improvement

The Shuttle Tension that the Stroboscope has shown Best for Your Yarn

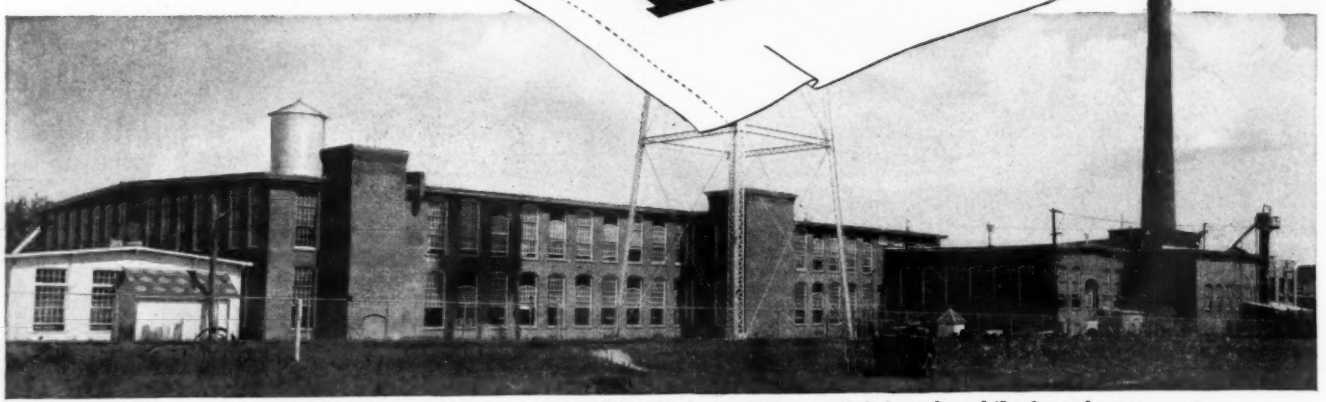
Guess Work is Out
With Draper Shuttles You Can Be Sure

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

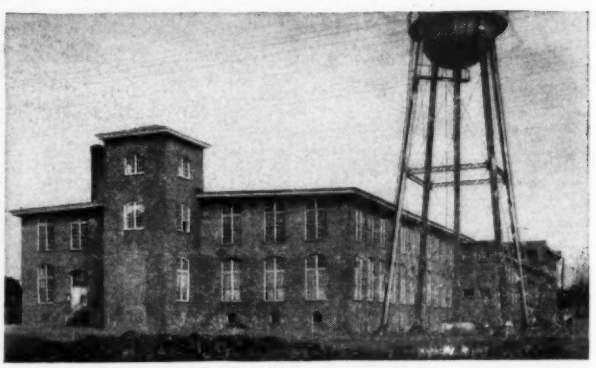
THROUGHOUT ALL 3 MILLS..

EFFICIENCY



THIS IS JACKSON MILL No. 1 at Iva, So. Carolina. This mill is 100% Texaco lubricated, and has been for 13 years.

MILL AT HIGH SHOALS, No. Carolina, the latest addition to the Jackson group. Now 100% Texaco lubricated, of course.



THIS MILL IS IN WELLFORD, So. Carolina, and is also owned by Jackson Mills. It, too, is Texaco lubricated exclusively, including the power plant.

THESE MILLS have built a most enviable reputation for maintaining a high level of production, year after year. Every department reflects highest efficiency. Every department is Texaco lubricated 100% . . . in all three properties.

Experienced lubrication engineers, trained in the selection and application of Texaco Textile Mill Lubricants, will be glad to demonstrate that savings can be made with Texaco Perfected Lubrication. For prompt engineering service and deliveries phone the nearest of our 2279 warehouses in the United States, or write to:

The Texas Company, 135 E. 42nd St., New York City.

TEXACO

TEXTILE LUBRICANTS

LUBRICANTS FOR LOOMS

You can now use loom lubricant that resists spattering and dripping from bearings. It does as its name implies...

STAZON

ASK ABOUT THE NEW

TEXACO STAZON

Texaco Dealers invite you to tune in the "Texaco Star Theatre"—a full hour of all-star entertainment—Every Wednesday Night—Columbia Network—9:00 E.D.T., 8:00 E.S.T., 8:00 C.D.T., 7:00 C.S.T., 6:00 M.S.T., 5:00 P.S.T.

EVER DUNK A WITCH?

it's an old salt superstition

City Fathers of the 1600's had a salt test for witchcraft suspects. They were tossed into brine. If one floated, she was sure enough a witch. While there seems to be no record of convictions, the cost in the solid citizens who sank must have been high.

Misconceptions about the salt content of electrolytic caustic soda may be costing some solid citizens in the textile industry the loss of profits today. Several large mills have become convinced of this since starting to use Warner Caustic Soda . . . a regular production grade caustic soda, with the salt content reduced to a percentage that has no discernible deleterious effect.

A frank discussion in your mill may clear up any misgivings you have about electrolytic caustic soda. If definite savings—made without fear of upsetting your present processes—is interesting, set the date and a Warner technical expert will call.

OTHER WARNER CHEMICALS

Tetra Sodium Pyrophosphate
Phosphoric Acid
Sodium Phosphates
(mono, di-and tri basic)
Liquid Caustic Potash
Chlorine, Liquid
Carbon Tetrachloride
Trichlorethylene
Carbon Bisulfide
Sodium Sulfide
Epsom Salt
Hydrogen Peroxide

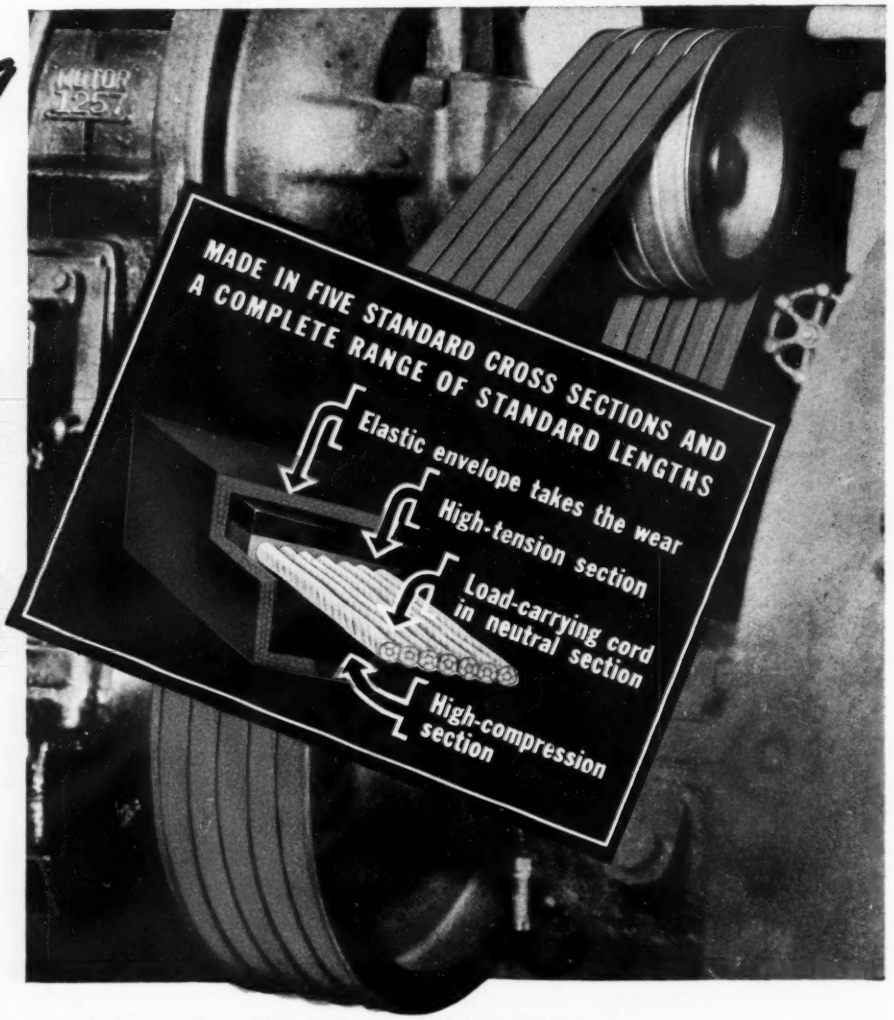
WARNER

CHEMICAL COMPANY ☆ DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

Announcing A SIGNAL IMPROVEMENT *in* MULTI-V BELTS


MADE IN FIVE STANDARD CROSS SECTIONS AND A COMPLETE RANGE OF STANDARD LENGTHS
Elastic envelope takes the wear
High-tension section
Load-carrying cord in neutral section
High-compression section

New balanced construction, new materials, improved matching insure closest uniformity in length, cross section, pull and service life!

More alike than peas in a pod

SUCCESSFUL and economical Multiple V operation depends upon teamwork. In V belts this means uniformity between belts. There must be no star performers eager to assume more than their share of the work—and no weak sisters, looking for a free ride.

After months of development and tests Goodyear is ready with a new improved E-C Cord Multi-V Belt whose keynote is *Uniformity*. Note the following characteristics, all of which contribute to proper teamwork between belts.

UNIFORMITY OF CROSS SECTION—each belt accurately molded to insure correct position in the sheave groove.

UNIFORMITY OF STRENGTH—a balanced cord load carrying member with the same number of high-tensile cords in every belt and throughout the length of each belt.

UNIFORMITY OF STRETCH—because of a new cord processing method developed by Goodyear which permits absolute control of cord characteristics. The cord is pre-shrunk, impregnated with liquid rubber, and gum insulated for stronger carcass bond.

UNIFORMITY OF LENGTH—belts are accurately measured under actual drive conditions, in standard grooves and under operating tension. A length code number on each belt permits the selection of properly matched sets in the field.

UNIFORMITY OF PULL—an improved envelope treatment permits all belts to grip the sheave groove evenly—eliminates any tendency for belts to grab and bind, spoiling the balanced teamwork of the set.

The above features all contribute to UNIFORMITY OF SERVICE LIFE—the answer to economical multiple V operation. There are no grabbers, no loafers—every belt's a puller—*pulling evenly.*

And that means longer life and highest efficiency at lowest ultimate cost.

In the new improved Goodyear E-C Cord Multi-V Belt you secure Goodyear's original endless cord construction—the ideal V belt design—now developed to the highest state of perfection. From an appearance standpoint also, the Goodyear E-C Cord V Belt is outstanding because of its attractive green color. The nearest Goodyear distributor can supply you now—or write Goodyear, Akron, Ohio.

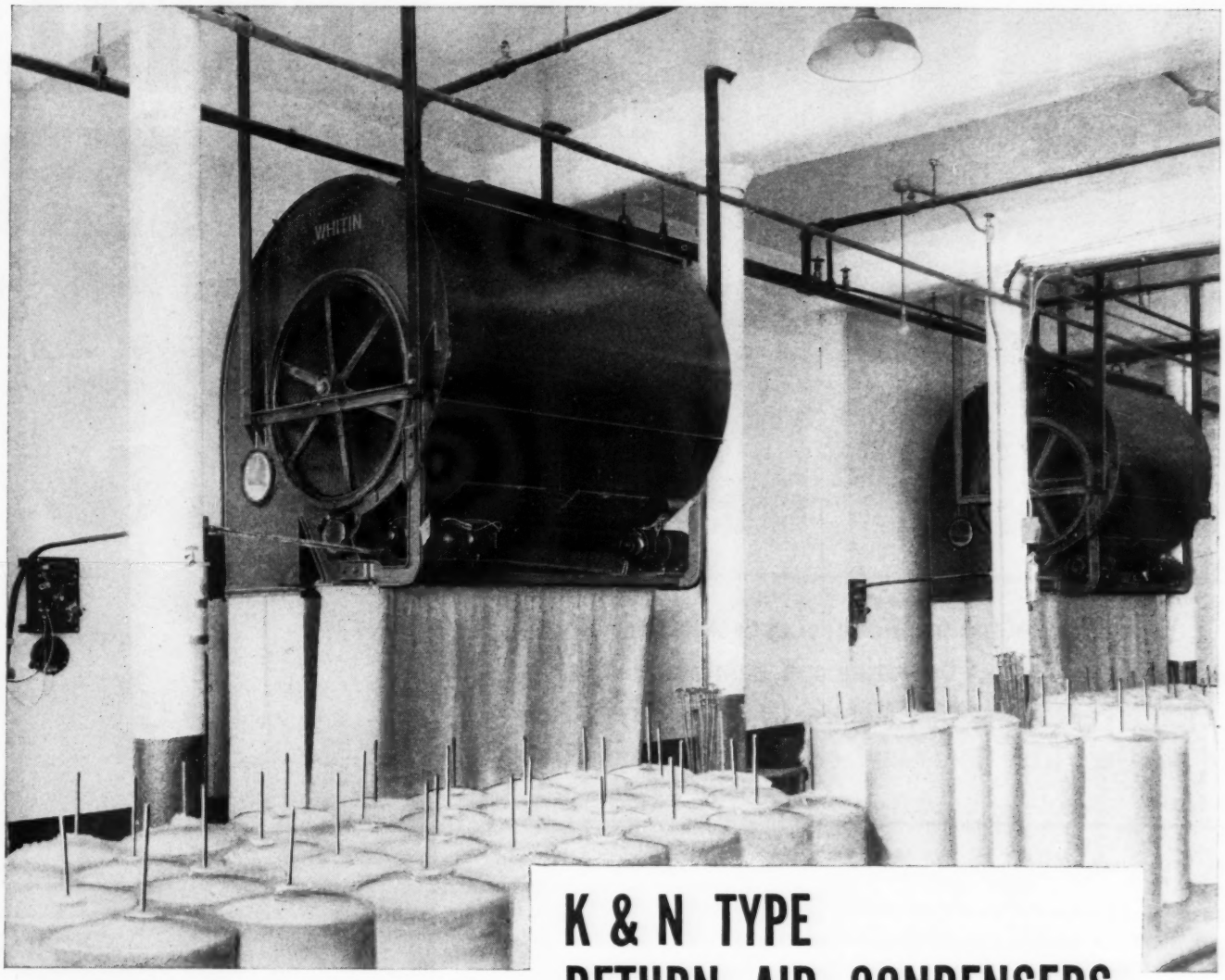
A Centennial Product of The Greatest Name in Rubber

ON YOUR NEXT ORDER *Specify*—

GOODYEAR

MULTI-V E-C CORD BELTS

E-C Cord—T.M. The Goodyear Tire & Rubber Company



K & N TYPE RETURN AIR CONDENSERS

Report from our Service Call:

in a Southern mill, connected to four 3-Beater Pickers. This unit replaced a large battery of air cleaners which failed to function to the satisfaction of the mill.

"Today the atmosphere is clean and clear. Dust drawn from the Pickers is deposited by the Condensers in the bag below. They operate these Condensers for about one hundred hours before removing the deposit in the bags. The picker laps look better, the management is delighted, and the operatives are happy."

CLEANER • MORE EFFICIENT • REQUIRE LESS ATTENTION

WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS, U. S. A.

CHARLOTTE, N. C. ATLANTA, GA.

ALLIS-CHALMERS UNDIVIDED RESPONSIBILITY

SOLVES TEXTILE POWER PROBLEMS!

Here's Your Chance to Cut Power Costs . . . Beat Shutdown Hazards . . . Reduce Operating and Maintenance Costs! Learn Why It Pays to Get Your Motors, Controls, Drives, and Speed Changers from One Manufacturer — Allis-Chalmers!

When you put Allis-Chalmers Texrope Drives . . . Sheaves . . . Quick-Clean Motors . . . and Controls to work for you in your textile mill, you thoroughly solve your power problems... eliminate shutdowns due to interrupted motor service!

And when you use the new, sensational Vari-Pitch Speed Changer, you get an additional profit-making service—instantaneous altering of speeds to suit changing operating conditions.

Undivided Responsibility!

Best of all, these units — drives, sheaves, motors, controls, and speed changers — are all made by Allis-Chalmers! One responsibility... unified service... and standardization that saves you money!

What's more — each item in the line stands on its own feet, a leader in its own field, with remarkable performance records to back them up.

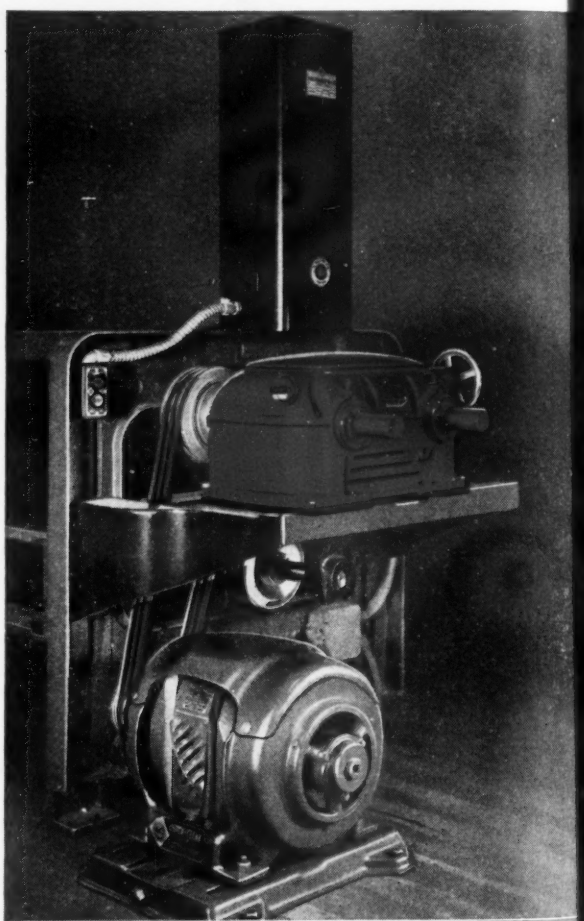
Every textile man knows about Allis-Chalmers Quick-Clean Motors and Controls — tailor-made to beat lint-laden air conditions in textile plants. Texrope Drives are equally famous for their economical, high-efficiency, long-life service under toughest textile conditions. And the new Vari-Pitch Speed Changer is rapidly taking its place of leadership in providing new standards in low-cost up-and-down speed changing!

Get Extra Performance!

You can depend on Allis-Chalmers products . . . depend on them to give you extra performance because of Full Measure design and construction.

For the whole story on Texrope Drives and Sheaves, Vari-Pitch Speed Changers, Quick-Clean Motors and Control Equipment . . . write to Allis-Chalmers, or call the district office nearest you. Solve your power problems . . . with Allis-Chalmers . . . the equipment that pays for itself!

A1128



IN THIS ONE INSTALLATION ARE shown five different Allis-Chalmers products — Quick-Clean Motor . . . Texrope Drive . . . Duro-Brace Sheaves . . . Motor Control . . . Vari-Pitch Speed Changer! Here's a clear cut case of the kind of undivided responsibility that helps you cut costs . . . beat operating problems!

Vari-Pitch Speed Changers • Texrope V-Belts • Duro-Brace Texsteel Sheaves • Vari-Pitch Sheaves • Standard Cast Iron Sheaves • Adjustable Pitch Diameter Texsteel Sheaves • 2-3-4 Combination Sheaves • Straitline Automatic Motor Bases • Oil Field Drilling Rigs

Belts by Goodrich

TEXROPE DIVISION

ALLIS-CHALMERS

MILWAUKEE · WISCONSIN

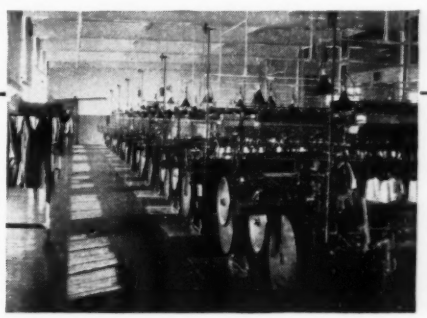
MFMA*

...*The* MARK *that means the floor will satisfy*

AUDITORIUMS—"There is no substitute for a Hard Maple floor," says the architect. Below, in herringbone strip pattern.

GYMNASIUMS—Architects, athletic coaches, and maintenance men agree, "Nothing takes the place of Hard Maple."

CLASSROOMS—Warm, dry, resilient Maple is the preferred flooring.



FACTORIES—"As sound as the day it was laid," says the mill superintendent, about this 22-year-old Maple floor.

...Protecting you on every flooring job

In Textile Mills and buildings of many different types, there is a simple way to play safe on every flooring job.

First, lay Northern Hard Maple. You *know*, then, that from every standpoint—appearance, comfort, ease of cleaning, maintenance cost, and *service*—satisfaction in use, is assured.

Second, when you order your Maple Flooring, be sure it's trademarked **MFMA***.

This mark on the wood means that the Maple Flooring Manufacturers Association, as well as the manufacturer of the flooring, guarantees that it is *all* Northern Hard Maple of the grade stamped thereon, in accordance with exacting Association standards. There is no question, then, of species substitution, or risk of inferior grade. You are sure that the same Hard Maple quality proved in countless installations, is present in the flooring *you* lay.

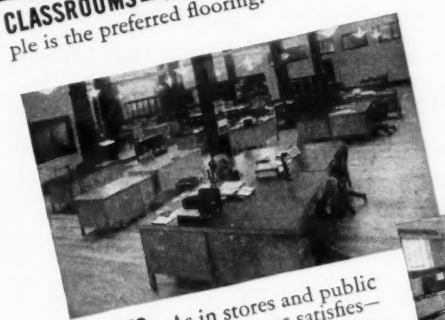
The safe rule for builders is the safe rule for architects: For certain satisfaction—in factories, mills, bakeries, auditoriums, office buildings, schools stores, or homes—choose Northern Hard Maple, (in strips or blocks) and look for the **MFMA** trademark on the flooring you buy.

MAPLE FLOORING MANUFACTURERS ASSOCIATION

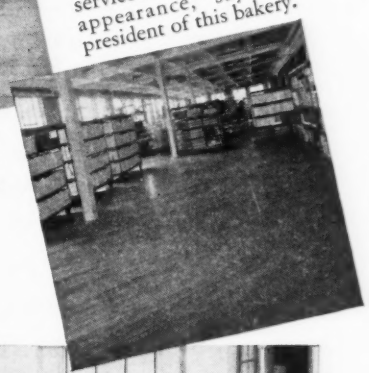
1794 McCormick Building, Chicago, Illinois

See our catalog data in Sweet's, Sec. 11/77.
Our service and research department will gladly assist you with your flooring problems. Just write.

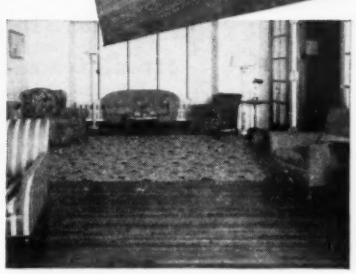
BAKERIES—"By far the most economical floor to service and keep in good appearance," says the president of this bakery.



OFFICES—As in stores and public buildings, Maple always satisfies—architect, owner and employee.



CLUBS—Hard Maple is modern as it is serviceable, matches any decorative scheme.



HOMES—Hard Maple offers permanent beauty. The owner writes: "This floor was laid in 1900!"

The **MFMA trademark, indented and stamped on Maple flooring, guarantees it to be all Northern Hard Maple, graded and supervised in accordance with the Association's exacting standards.*

Floor *with* MFMA Maple

REG. U. S. PAT. OFF.

(NORTHERN HARD)

HOW TO KILL TIME PROFITABLY

MILL AFTER MILL REPORTS THAT DECERESOL* OT

kills time profitably on more than a score of finishing operations...increases efficiency...saves money wherever it is put to work.

Below is a case in point. A leading mill clips 30 minutes off a 75 minute operation! Doubtless there are steps in your process in which you can make similar savings.

A folder outlining 20 of the different ways to cut costs and improve finishing with DECERESOL OT is available on request. Write to our nearest branch office for your copy.

*Registered U. S. Patent Office.

SOUTHERN DISTRICT FIELD REPORT #T-2409
FROM A. B. S. TO Main Office
SUBJECT XXXXX Company

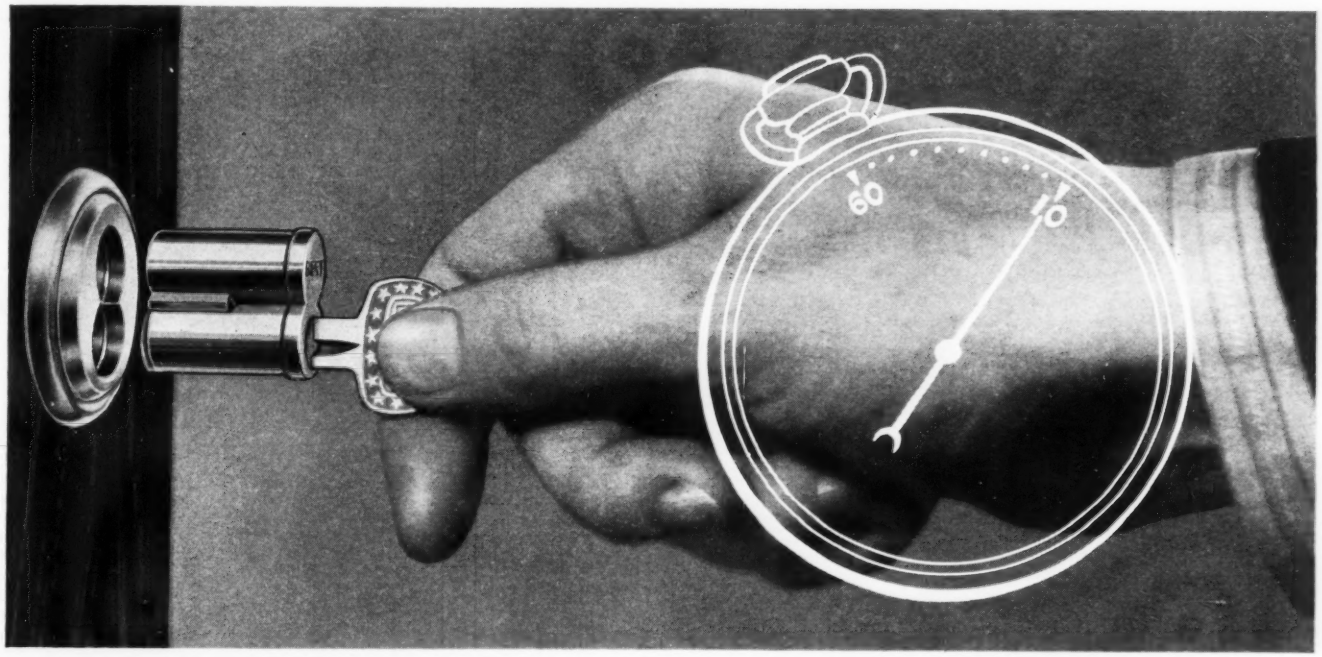
This account has just taken out a dyeing with the use of DECERESOL OT. It was a light pink shade on tightly wound packages. The dyeings were very even. They used 1% and circulated machine 10 minutes cold and added dyestuff and were able to take dyed lot off in 45 minutes instead of usual 1-1/4 hours.

AMERICAN CYANAMID & CHEMICAL CORPORATION

30 ROCKEFELLER PLAZA • NEW YORK, N. Y.

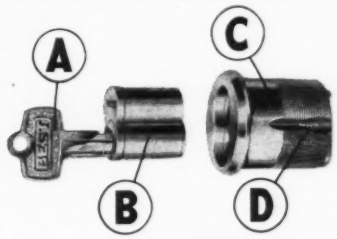
DISTRICT OFFICES:

822 West Morehead St., Charlotte, N. C.; 89 Broad St., Boston, Mass.; 600 S. Delaware Avenue, Corner South Street, Philadelphia, Pa.; 20 North Wacker Drive, Chicago, Ill.



Picture of a mill officer changing a lock

in ten seconds



Every BEST LOCK is equipped with the exclusive BEST INTERCHANGEABLE CORE

There is a size or type of BEST LOCK or LATCH for every use . . . on mill gates, supply rooms, shipping rooms, tool houses, oil houses, offices, desks, drawers and cabinets. And every one has the BEST Interchangeable Core which is instantly interchangeable with any other BEST lock core on your property.

Your private control key (A) removes the Core (B) from its housing (C) and replaces it with another. A slight turn of the key and the core slips out but it is impossible to remove it in any other way. The safety set screw (D) which holds lock in place is deep inside the lock housing and cannot be tampered with.

FITS PADLOCKS, TOO

BEST Interchangeable Cores not only fit locks in fixed housings but can be inserted in BEST padlocks, too. This increases the flexibility of your locking system. Many cotton mills and other industrial plants enjoy the positive protection, certain security and flexibility that only BEST Locking Systems afford.

How to cut costs of lock servicing and replacement . . . and keep constant control of all mill property

Danger threatens! It may be caused by one lost or stolen key . . . or by problems that threaten your entire property. To quickly bar unauthorized intruders by changing *old-fashioned* locks is practically impossible.

BUT . . . if your plant is equipped with BEST UNIVERSAL LOCKS . . . the only locks with the exclusive, patented BEST *Interchangeable Core* . . . security is certain! Changing a lock is the work of an instant.

The above picture illustrates how. Your control key instantly removes the core (which contains the locking mechanism) from the lock, replaces it with another core of different combination. All keys under suspicion are useless at once. In ten seconds . . . you have a *new lock's security without a new lock's expense!* And authority is kept *right where you want it!*

The average mill spends plenty on lock upkeep and replacement, but with BEST LOCKS you cut these costs because you don't buy new locks or waste time on the old ones. Simply replace one lock core with another. Then the removed core is recombinated for use elsewhere.

Your mill can be BEST-equipped without changing present lock hardware. You can start in a small way, with a few locks, and gradually build up a complete, flexible BEST master-keying system to protect your entire properties. A trained BEST LOCK engineer is near to advise and help you.

☆ ***Write direct to us for the complete BEST story and our illustrated Preview Catalog***

BEST UNIVERSAL LOCK COMPANY, INC.
730 EAST WASHINGTON STREET, INDIANAPOLIS, INDIANA
REPRESENTATIVES IN ALL LEADING CITIES

Out of the Witch's Cauldron comes *trouble* for turbine bearings

Air—water—catalysts—heat—pressure. That's the beating a turbine oil must take. To build a product that can stand such treatment *at all* is an accomplishment. But to put the proper grade in service, check it and watch it, and *keep it in service* for months and years until it pays for its cost, is the job Shell undertakes.

First there's the oil itself: Shell Turbo Oil. Research and refining, tied in with the experience of turbine builders and users, have produced an oil of unusual stability.

Next, Shell realizes operating variables require that even the finest oil be given every chance to succeed. **Hence Shell has created a staff of experienced engineers—thoroughly capable of giving *real help*, not their mere presence, to turbine manufacturers and users.**

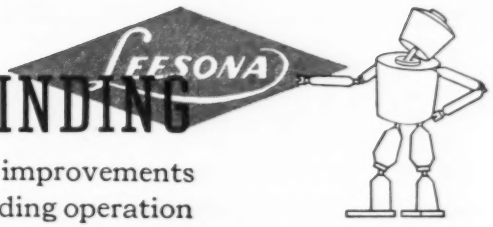
And the Shell product and plan are working. We have enjoyed a substantial increase in business and gained the confidence of technical staffs in this field from coast to coast.

SHELL

SHELL TURBO **OIL**

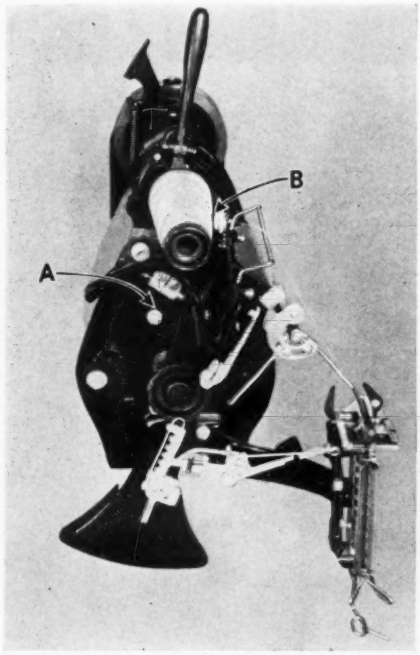
THIS IS NO. 17 OF A SERIES ON

GETTING THE MOST FROM WINDING



Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

PROPER SETTING OF TRAVERSE FRAME STOP UPPER (No. 50 Winder)



The proper setting of the Upper Traverse Frame Stop (A) will make a difference in the quality of winding. If the Thread Guide (B) is allowed to come too close to the empty paper cone, there is danger on fine yarns of the first few layers being roughed by the Thread Guide, since the paper core on the metal cone holder makes an unyielding foundation.

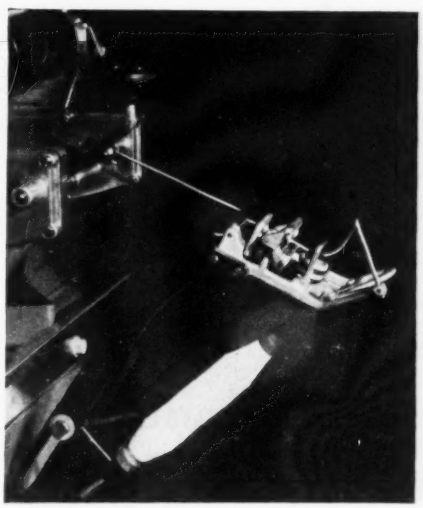
If, on the other hand, the Stop is set so that the Thread Guide is too far away, then the coils put on the core at the start of winding are inclined to be too soft. Pressure applied by the succeeding layers of yarn will cause the soft center layers to be squashed out at the ends. This means, in the case of sales yarn particularly, that the finished package will not pass inspection.

The setting of the Stop should be such that three or four layers of fine yarns will be wound before the Thread Guide touches the package. (Less for heavy yarns.) These layers will act as a cushion between the Thread Guide and the firm foundation of the paper core. They will also allow for any slight eccentricity in the cone holder or in the spindle or for a thick lap on the paper core. Mills winding a variety of yarn numbers can usually determine upon one setting that will do for the entire range. The setting is preferably made with the Thread Guide at the center of the traverse.

Once the setting has been made, it should be checked at regular intervals and also after changing a Thread Guide, Thread Guide Holder, Cam Roll or any part which would influence the setting.

PROPER LOCATION OF SUPPLY PACKAGE (Roto-Coner)

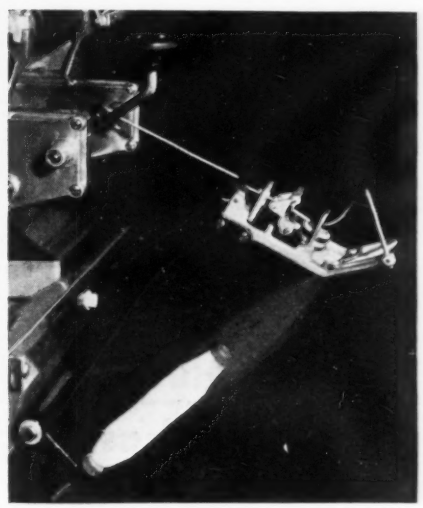
It is important, particularly on winders operating at high speed, to have the proper distance between the supply spindle and the tension bracket. The correct location of the supply spindle will keep the end breakage at a minimum.



Bobbin close to tension bracket — yarn delivers with short, fat balloon

When the supply package is up close to the tension, there is a wide ballooning of the yarn, with a minimum amount of tension. When the supply is farther away, the balloon is long and narrow, and the yarn, in delivering, may drag over the surface of the package, which increases the tension.

One mill recently called on us to help improve their winding of a new yarn that was spun on a new size of bobbin. It was pointed out to them with actual experiments that the supply bobbin was too far away from the tension bracket. When delivering from the top of the bobbin, there was a single balloon, which changed to a double balloon when about half the yarn had been removed. At the point where the change occurred, end breakage was experienced. Bringing the supply closer to the tension bracket eliminated the trouble but the supply spindle was so long the bobbin could not be removed. The spindles were altered so they would go lower in the bracket leaving a shorter length to fit into the bobbin. Each case must be studied individually, for the many types of packages and many variations in winding speed forbid any general rules. In most cases, the supply should be very close to the tension bracket. In some few cases it should be as far away as possible. A tension indicator will register a difference as the position of the supply package is changed. In any event, once the proper location has been determined, there should be a uniform setting for all supply spindles.



Bobbin far away — yarn balloon is long and thin

It is also important to have the same build of supply package; many cases of unsatisfactory results on the winder have been traced back to irregular lengths of stroke on the spinning frame or irregular speeds of the ring rail. It will also help to have the Builder Cams on the spinning frames all turned the same way.

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

HOW TO GET FEWER "ENDS DOWN"

Better Bre

Gargoyle Velocite Oils' outstanding lubricating value and resistance to oxidation can help make these important savings in your spinning room—

☛ **Reduce "Ends Down"... with a smooth, steady load on every frame.**

☛ **Reduce Power Consumption... and save on frictional wear.**

☛ **Reduce Shutdowns...because these oils help bases stay clean!**

THE SOCONY-VACUUM man offers you a complete line of lubricants, plus these *exclusives:*

The right lubricant for every machine... and new lubricants ahead of new needs... developed by world-famous research laboratories through close cooperation with machine builders.

73 years' experience—thousands of case histories—to guide in prescribing the right use of these lubricants to gain Lubrication Profits for you.

World-wide distribution and guaranteed uniformity—the same quality available everywhere.

***Another Tough Job for* OIL FILM**

Successful operation of every machine depends on the quality of the oil that forms the *microscopic coating* which helps prevent metal-to-metal contact.

N THE SPINNING ROOM AND A

ak on Profit!

SOCONY-VACUUM

Industrial Service and Lubricants Help to Lower Costs by

Correct Lubrication

GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC.

Standard Oil of New York Division · White Star Division
Lubrite Division · Chicago Division · White Eagle Division
Wadhams Division · Magnolia Petroleum Company
General Petroleum Corporation of California

EACH THREAD SHOWS THE RESULT OF AUTOMATIC HUMIDITY CONTROL

Day after day, Winter and Summer alike, the ideal manufacturing climate can be maintained automatically with the aid of the Foxboro Humidity Control. Fibres that are strong and flexible, hence easily woven, are obtained. During weaving the correct fibre regain will be maintained and fibres will "lay up" to assure uniformly fine bolts. « « « All this means saving by minimizing waste and rejects and attaining more efficient production. You will find Foxboro's intimate knowledge of textile requirements, and the many developments and improvements Foxboro has engineered in the textile field, of vital interest. Write for complete information to the textile division.

THE FOXBORO COMPANY
18 Neponset Ave., Foxboro, Mass., U.S.A.
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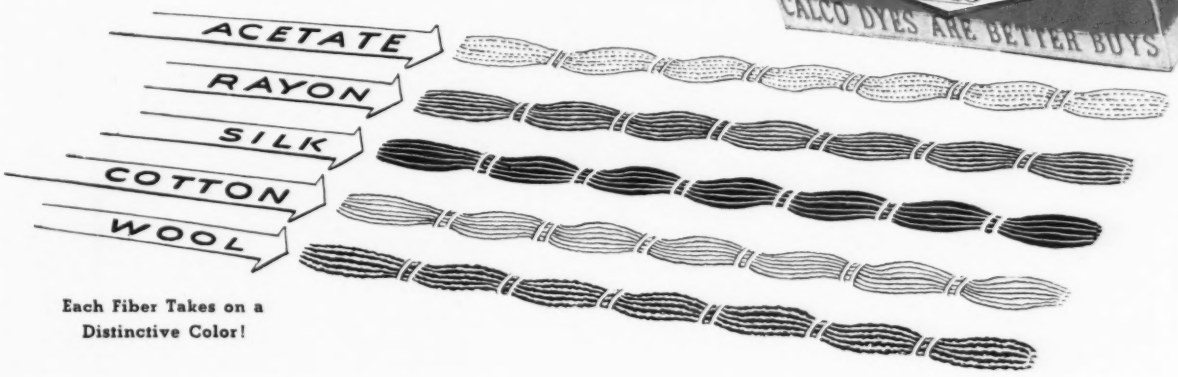
FOXBORO
REG. U. S. PAT. OFF.
RECORDING CONTROLLING · INDICATING
Instruments
TEMPERATURE · LIQUID LEVEL
PRESSURE · FLOW · HUMIDITY
Controlled ACCURACY RESPONSE

FREE

CALCO TEST KIT

Takes the guesswork out of Fiber Identification!



Each Fiber Takes on a Distinctive Color!

Send Today For Your FREE Identification Kit

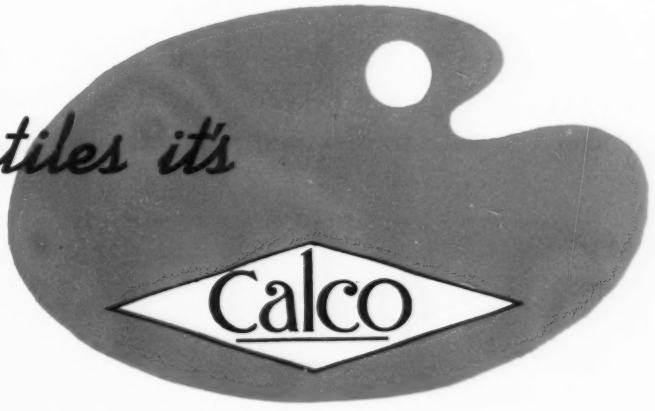
As mixtures and unions of different fibers become more common and more varied, it becomes more important—and harder—to know exactly what's in any material before dyeing it.

Calco's new Identification Stain Kit gives you the answer—without guesswork—in a matter of minutes! It is supplied in a handy box, complete with directions and a guide swatch showing exactly how acetate, rayon, silk, cotton and wool fibers react to this special Calco stain. Each kit contains enough of this special Calco stain to last for months!

You'll find it one of the most useful gadgets you ever had. It's yours for the asking for the simple reason that being helpful to the Textile Industry is as much a part of our business as supplying dyes and chemicals.

Send for your free kit *today*—for we expect a tidy number of requests, and there may be an unavoidable delay if *yours* reaches us after our present supply is exhausted. So drop us a line now, asking for Calco Identification Stain Kit No. 1. The address is The Calco Chemical Company, Inc., Dept. C-9, Bound Brook, N. J.

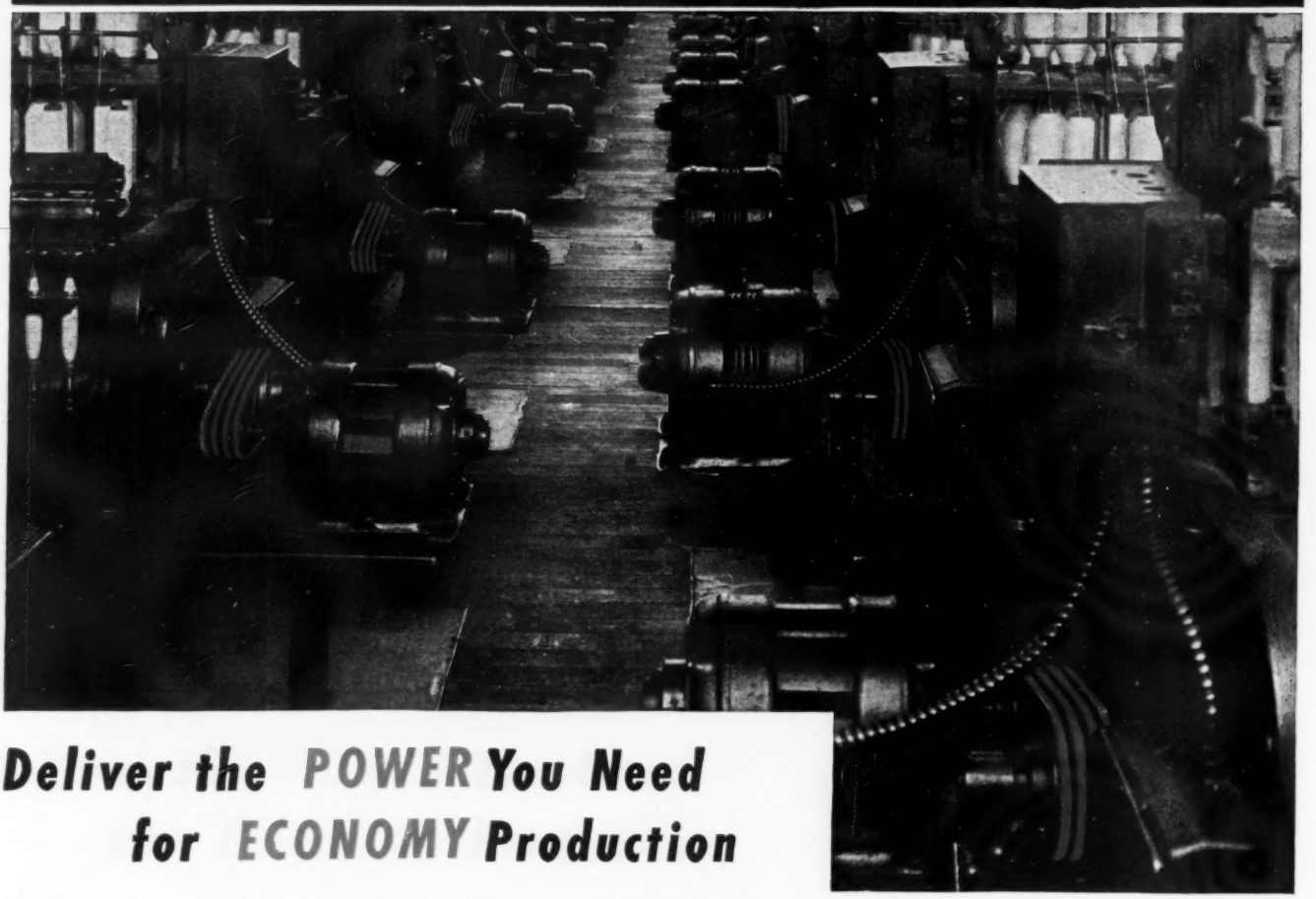
For Color in Textiles it's



THE CALCO CHEMICAL COMPANY, INC.
BOUND BROOK NEW JERSEY

Boston • Philadelphia • Providence • New York • Charlotte
Chicago • A Division of American Cyanamid Co.

CONDOR WHIPCORD V-BELTS



Deliver the POWER You Need for ECONOMY Production

Make it a point to say "Condor Whipcord V-Belts" the next time you replace an old or equip a new drive. Then, get ready for a long-lasting, money-saving experience in transmitting power.

Regardless of pulley size, load variations or flexing, Condor V-Belts are made to keep a firm, steady grip on the walls of the sheave groove and laterally reenforced against wear and squeezing. Their cord section, concentrated in a narrow plane and placed in the neutral axis to reduce destructive internal stresses and heat, takes loads without undue stretch.

Write now for Bulletin 6868 which contains clear, easy-to-read facts on Condor Whipcord V-Belts' 8-Point Balanced Construction. It will be your first step toward getting the power you need to maintain production economy.

Condor PRODUCTS

V-Belt
Transmission Belt
Cone Belt
Air Hose
Acid Hose
Water Hose
Fire Hose
Steam Hose
Suction Hose
Molded Rubber Goods
Oilless Bearings
Hard Rubber Pot Eyes
Rubber Lined Tanks
Rubber Covered Rolls
Abrasive Wheels
Bowling Balls

Write for Manhattan's new Condor Whipcord V-Belt Engineering Data Book.

THE MANHATTAN RUBBER MFG. DIVISION
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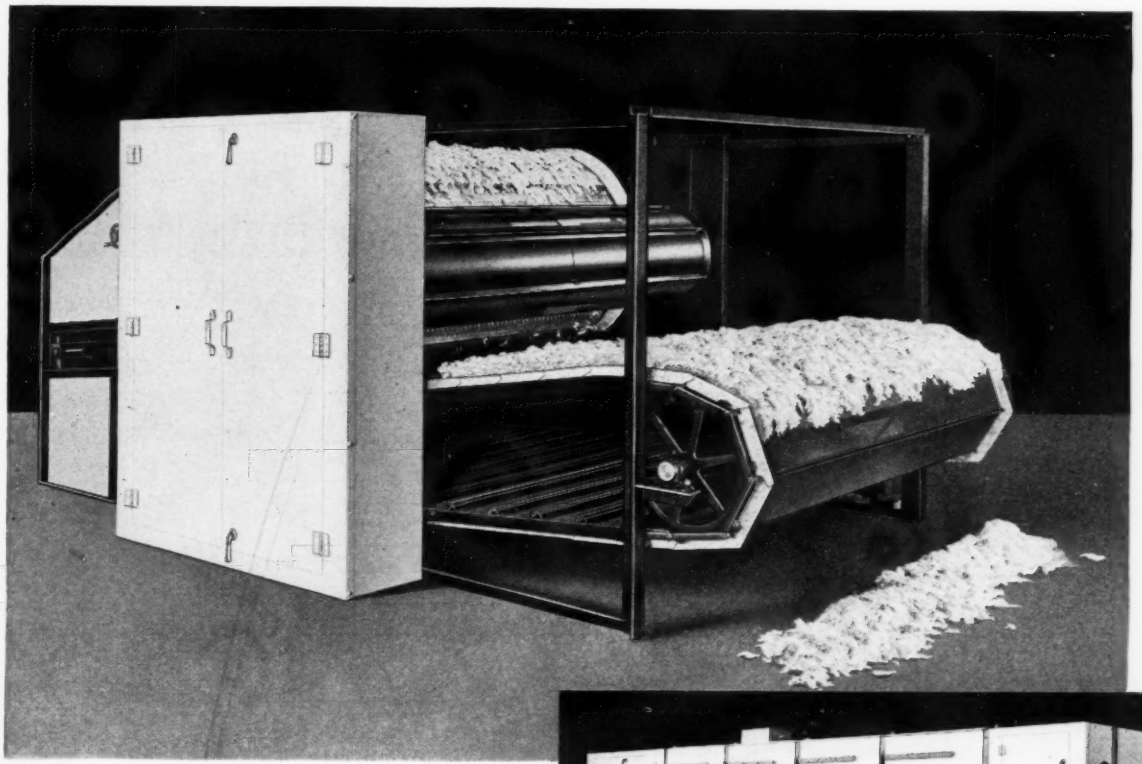
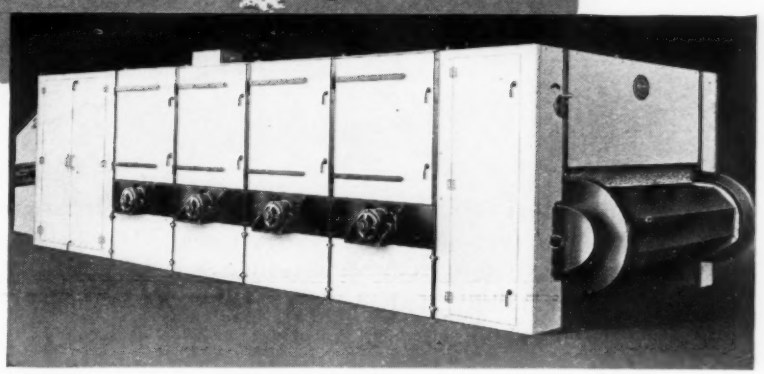
48 Townsend St., Passaic, N. J.





New PROFITS FROM THE RAW STOCK DYE HOUSE!

IF you are now operating centrifugal extractors in your stock dye house—or if you are operating stock dryers over five years old, Hunter engineers can show you how you can make genuine and worthwhile savings in time, money, labor and steam. For example:

In one recent survey made by Hunter Engineers, in a Southern cotton mill, they were able to demonstrate a direct savings of $5800 per year in labor and steam alone by new equipment installation. As well there was a decided savings in floor space.

In a recent installation Hunter Rotary Feeders, Squeeze Rolls, Blowers and Dryers eliminated 8 men in the dye house.

For full details of what new Hunter automatic equipment can do in your mill, and for full information on the new Hunter free engineering survey write

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASS.

•

Southern Agents:
CAROLINA SPECIALTY CO., Charlotte, N. C.

Western Representative:
E. G. PAULES, 343 Bendix Bldg., 1206 Maple St.
Los Angeles, Cal.

JAMES HUNTER MACHINE CO., North Adams, Mass.

Please send me Bulletin RF which gives newest information on Automatic Feeding and Drying.

Name..... Title.....

Company .....

City..... State.....

GOOD BUSINESS NEWS

ASSURED that OPEN ACCOUNT FINANCING was the easiest and soundest way to finance their business without increasing their capital investment, MAJOR MILLS, Inc.,* eliminated one stubborn problem by a simple change in method.

They changed from the Notice to Customers to the "NON-NOTIFICATION" Plan. Customers had objected to having a third party in every transaction—an outsider supervising credits, and making collections. Continuance of the former plan threatened the loss of desirable accounts.

Investigation of our "NON-NOTIFICATION" Plan quickly led to its acceptance.

It restored to MAJOR MILLS, Inc. its proper function of passing on credits to customers.

It re-established the routine of having customers make direct payments on usual terms.

It eliminated red-tape, complications and delays. It eliminated outside interference with the operations of their business.

It enabled our client to expand through new outlets. By the end of the first year MAJOR MILLS, Inc. was able to show an increase in volume from an annual rate of $585,000 to better than $1,000,000.

* * * *

Frequently we are able to show how concerns can multiply the working power of present capital and finance substantially increased sales without adding to capital investment or negotiating time loans. Our booklet "CAPITAL AT WORK" explains. Let us send you a copy. Write to Dept. "TM." No obligation.

**A fictitious name, but the facts and figures, taken from our records, can be certified.*

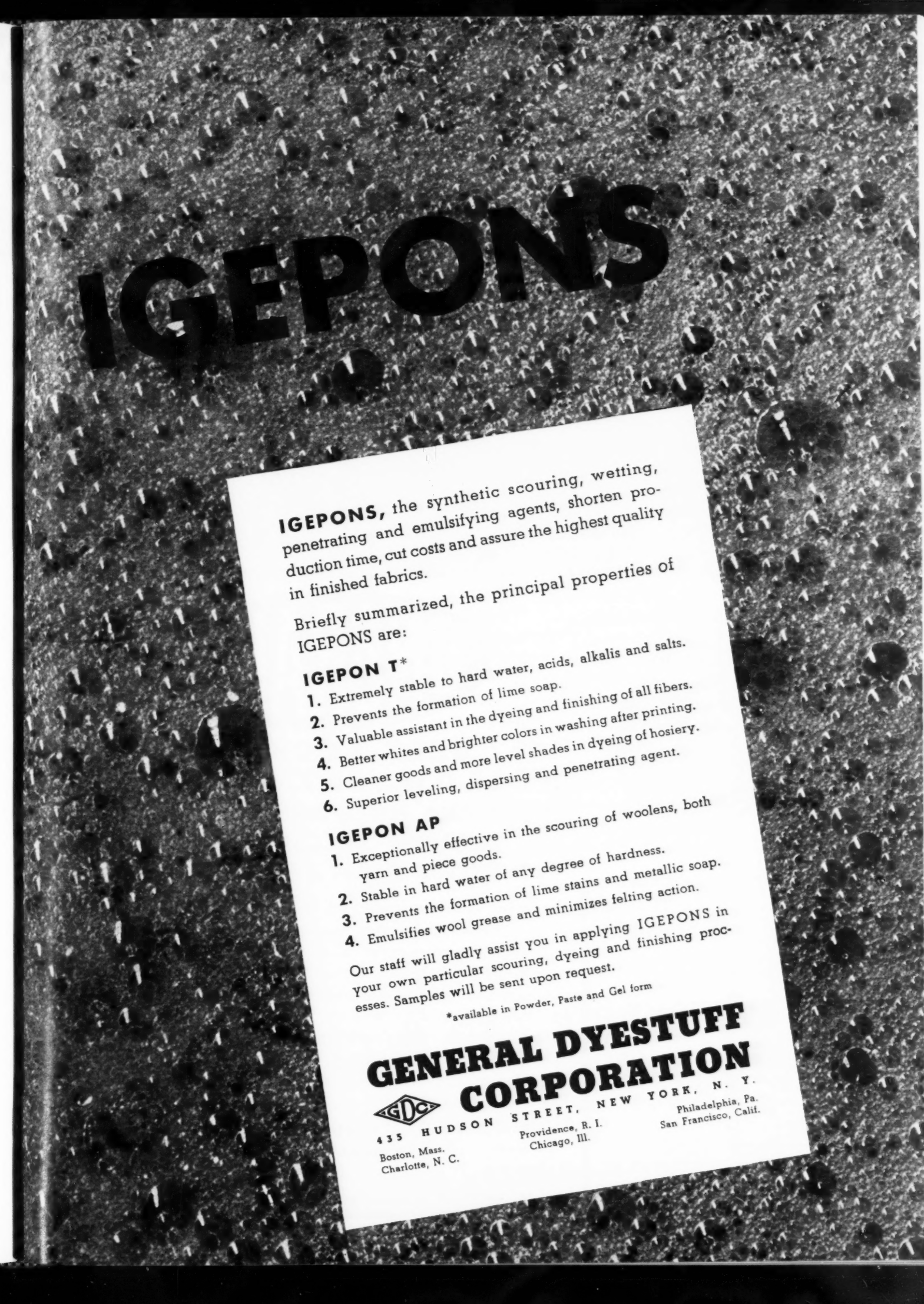
COMMERCIAL CREDIT COMPANY

"Non-Notification" Open Account Financing

BALTIMORE

BOSTON NEW YORK CHICAGO SAN FRANCISCO PORTLAND, ORE.

CAPITAL AND SURPLUS MORE THAN $65,000,000



IGEPONS, the synthetic scouring, wetting, penetrating and emulsifying agents, shorten production time, cut costs and assure the highest quality in finished fabrics.

Briefly summarized, the principal properties of IGEPONS are:

IGEPON T*

1. Extremely stable to hard water, acids, alkalis and salts.
2. Prevents the formation of lime soap.
3. Valuable assistant in the dyeing and finishing of all fibers.
4. Better whites and brighter colors in washing after printing.
5. Cleaner goods and more level shades in dyeing of hosiery.
6. Superior leveling, dispersing and penetrating agent.

IGEPON AP

1. Exceptionally effective in the scouring of woolens, both yarn and piece goods.
2. Stable in hard water of any degree of hardness.
3. Prevents the formation of lime stains and metallic soap.
4. Emulsifies wool grease and minimizes felting action.

Our staff will gladly assist you in applying IGEPONS in your own particular scouring, dyeing and finishing processes. Samples will be sent upon request.

*available in Powder, Paste and Gel form

GENERAL DYESTUFF CORPORATION

GDC

435 HUDSON STREET, NEW YORK, N. Y.

Boston, Mass.
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Providence, R. I.
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Philadelphia, Pa.
San Francisco, Calif.

Fig. 1641
Pat. App. For

UNBRAKO

SELF-LOCKING HOLLOW SET SCREWS with the knurled points are 1-STRONG 2-ACCURATE and 3-WON'T SHAKE LOOSE

When you use these screws, you're insuring against a heap of trouble. Gone is the need to continually check up on set-screws . . . you just know they're tight all the time, and as they do stay that way no trouble can follow. The clever knurling on the points locks them in place, once they're set up in the usual way. Removal is easily made with the ordinary hex bar wrench when adjustments are needed and the screws re-used any number of times. Write now for samples and literature.

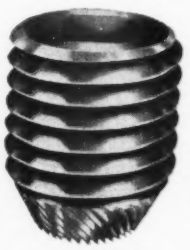

Fig. 1645
Pat. App. For

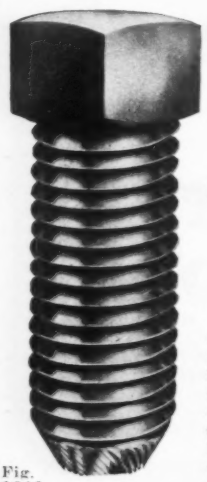

Fig. 1646
Pat. App. For

UNBRAKO

SQUARE HEAD SET SCREWS

have this protection feature, too

Our Square Head Set Screws, known and liked throughout the industry for years can now be furnished with the knurled self-locking points. Safety added to quality gives them undeniable superiority.

STANDARD PRESSED STEEL CO.

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INDIANAPOLIS

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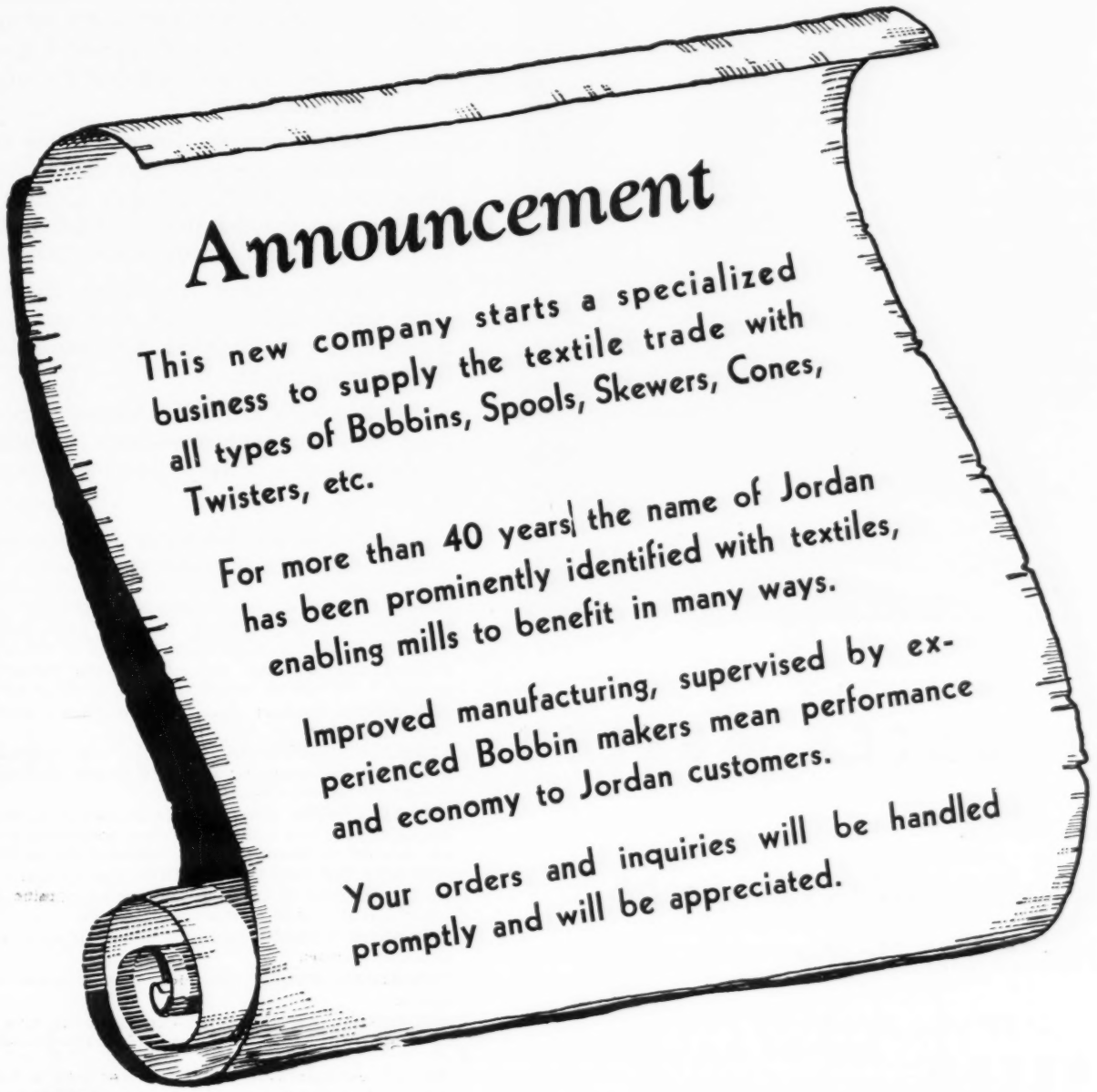
JORDAN *Bobbins*


Announcement
This new company starts a specialized business to supply the textile trade with all types of Bobbins, Spools, Skewers, Cones, Twisters, etc.
For more than 40 years the name of Jordan has been prominently identified with textiles, enabling mills to benefit in many ways.
Improved manufacturing, supervised by experienced Bobbin makers mean performance and economy to Jordan customers.
Your orders and inquiries will be handled promptly and will be appreciated.

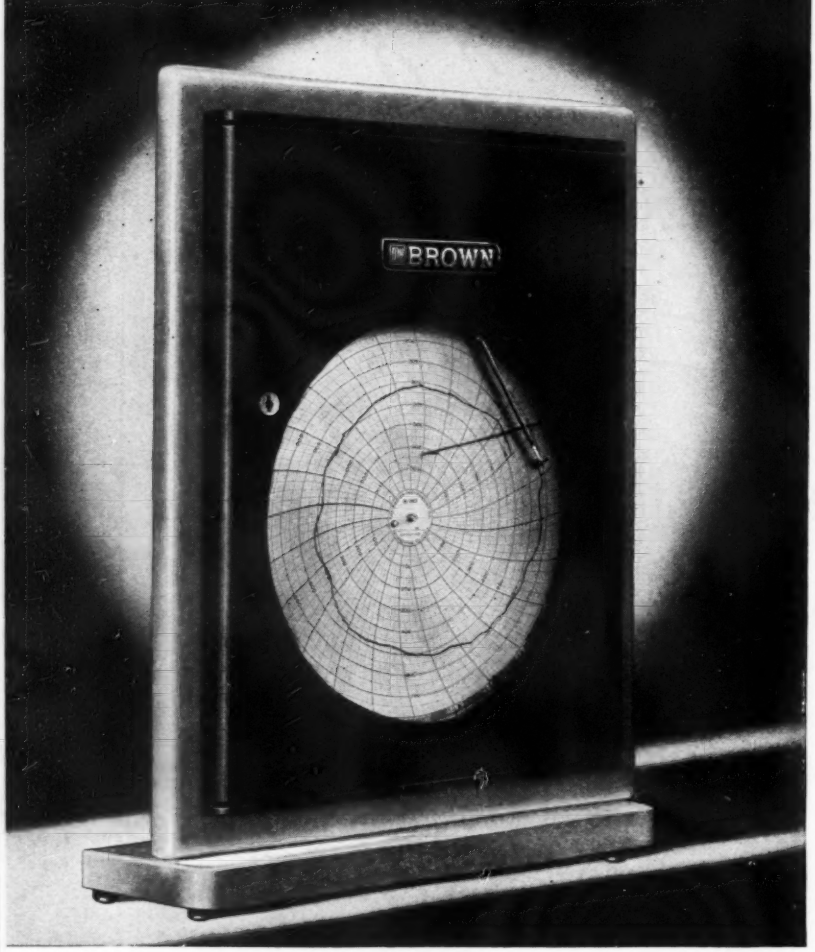
JORDAN *Manufacturing Company . . .*

Specializing in

A. L. BOBBINS
WARP BOBBINS
SPEEDER BOBBINS
AND SKEWERS
SPOOLS
CONES
TWISTERS
ROLLS, ETC.

MONTICELLO, GEORGIA

BROWN *Announces* *a New Thermometer*



With justifiable pride The Brown Instrument Company presents the latest development in temperature and pressure recorders, indicators and controllers.

These new temperature and pressure instruments are entirely new inside as well as out. Advanced design of the operating mechanisms provides a new conception of *accurate measurement with simplicity* —the result of years of research and field testing under actual operating conditions by Brown Engineers.

The classic, simple lines of the modern streamlined case—styled by Henry Dreyfuss, designer of the "Twentieth Century Limited"—give added beauty and distinction to practical and serviceable instruments.

For modern panel mounting they blend with the panel surface and surrounding instruments to provide the much-wanted flush appearance.

Available with mercury, vapor or gas-actuated thermal systems—built to withstand vibration, shock and over-range temperatures.

ADVANCED DESIGN

Assures

Accurate Measurement

with Simplicity

•

MODERN RECTANGULAR CASE

Styled by **HENRY DREYFUSS**

***Designer of the* "Twentieth Century Limited"**

Advanced Design Embodies:

SPIRAL ACTUATING ELEMENTS: Powerful, flat spiral, ample torque, especially heat-treated to insure permanent calibration. Have exceptional over-range capacity.

OVERLOAD SAFEGUARD: A special safety link between actuating element and pen arm contains a two-way spring overload release which also protects the mechanism from damage if the pen is moved in either direction manually.

PEN ARM: Stainless steel, 8" long, ribbed reinforcement, permits pen travel of 4¾".

RESILIENT MOUNTING: A rigid, flat sub-plate with 3-point, resilient suspension mounting carries all moving parts. Insures permanent alignment.

CHART DRIVE: Chart is firmly secured to driving mechanism by tapered hub and tapered chart positioning stud. Charts are punched to correspond with tapered studs on driving hub.

AUTOMATIC CHART TIMING: Charts when renewed are automatically in time; as the tapered position stud is in effect the hour hand of the electric clock.

ADAPTOR BLOCK: Designed to permit easy removal of actuating element.

TERMINAL BLOCK: Moulded Bakelite with screw terminals.

RECTANGULAR CASE: Die-cast aluminum, dust and moisture-proof. Permits flush or front-of-board mounting.

The above-mentioned features are but a few of the many new developments found in the new Brown Thermometer and Pressure Recorders

For full details write The Brown Instrument Company, *a division of Minneapolis-Honeywell Regulator Co.*, 4492 Wayne Avenue, Philadelphia, Pa. Offices in all principal cities. Toronto, Canada: 117 Peter St. . . . Amsterdam-C, Holland: Wijdesteeg 4. . . . England: Wadsworth Road, Perivale, Greenford, Middlesex. . . . Stockholm, 16, Sweden: Nybrokajen, 7.

BROWN THERMOMETERS AND PRESSURE GAUGES

Accurate Measurement with Simplicity

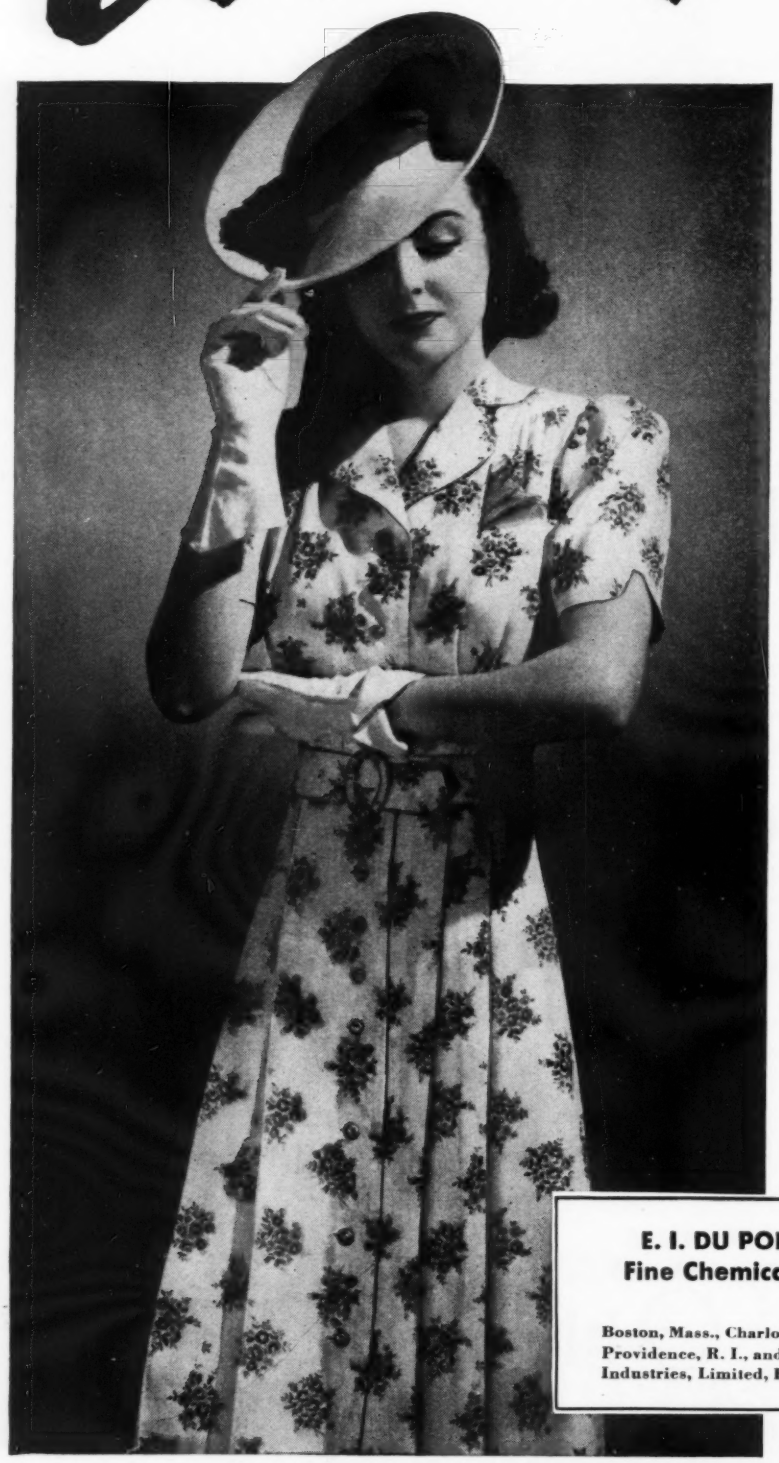
STANDARD OIL LUBRICANTS and the South's textile industry have grown up together... With fifty years experience in the development of the *right* lubricant for each machine, Standard's lubrication engineers can show you how STANDARD OIL LUBRICANTS reduce spoilage, power losses and maintenance overhead.

STANDARD OIL COMPANY

INCORPORATED IN KENTUCKY

THE LATEST ADDITION TO THE "AVITEX" FAMILY

"AVITEX" VS



HERE'S a new finishing agent that makes rayons more beautiful to the eye, more luxurious to the touch—"AVITEX" VS! This remarkable new agent creates a rich, full hand—a smooth flowing drape—brighter, more vivid colors.

Rayons finished with "AVITEX" VS not only look better, but give you assurance that they're going to stay that way. The whites stay white—the colors remain bright—even after months in storage. There isn't any danger of losing sales through rancidity, yellowing or unpleasant odors because "AVITEX" VS keeps rayons mill-fresh!

We'll be glad to show you how "AVITEX" VS can help you obtain better-looking, faster-selling rayons without increasing production costs in any way. Just drop a line to any one of our sales offices listed below.

DU PONT
REG. U.S. PAT. OFF.

AVITEX

REG. U.S. PAT. OFF.

TEXTILE FINISHING AGENTS

E. I. DU PONT DE NEMOURS & COMPANY, INC.
Fine Chemicals Division . . . Wilmington, Delaware

SALES OFFICES:

Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I., and San Francisco, Calif. Represented in Canada by Canadian Industries, Limited, Box 1260, Montreal, Quebec, and 372 Bay St., Toronto, Ont.

HYATTS ARE *Right* IN THE CENTER OF ACTION

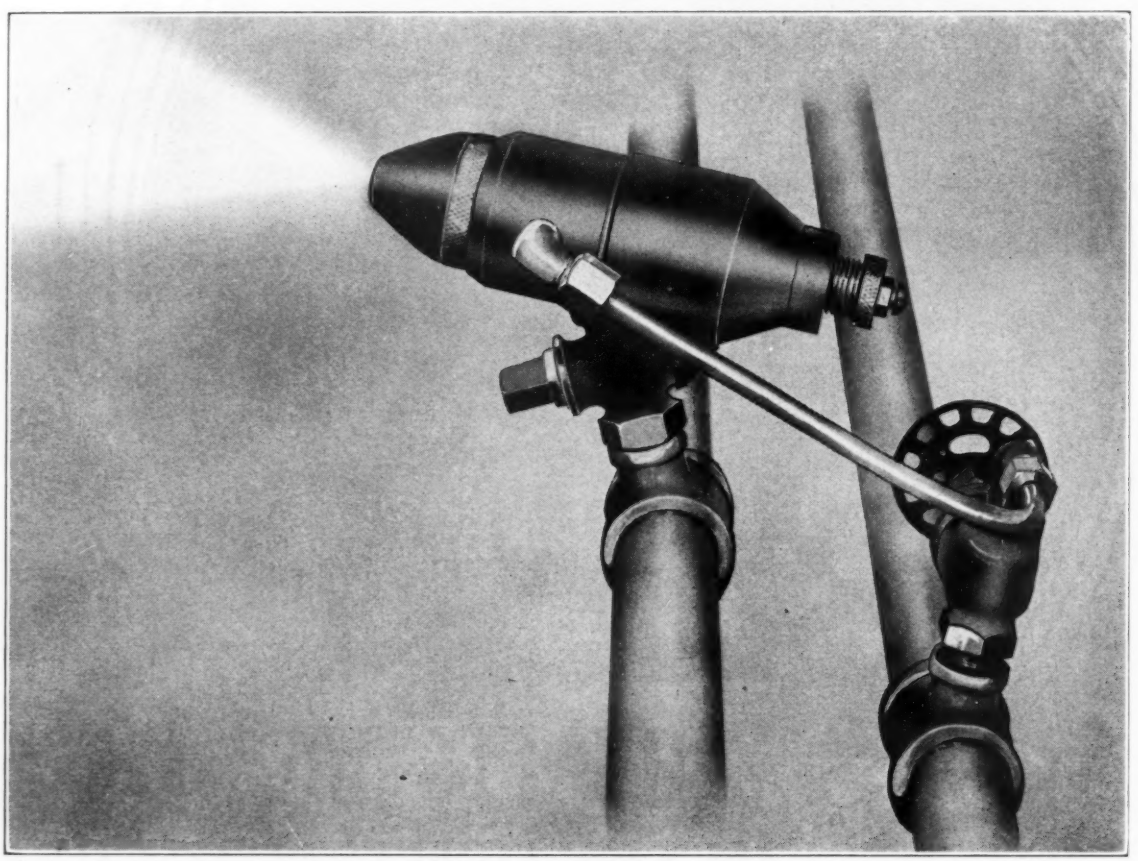
Many builders of preparatory equipment, looms, and finishing machinery include Hyatt Roller Bearings in their designs. Specify Hyatts and be sure.

HYATT ROLLER BEARINGS

ACTION *CENTERS* AT THE BEARING POINTS, where power meets load—where you must guard against friction, waste, wear, maintenance, replacements, shut-downs. And here, where the battle for efficiency is fought, Hyatt Roller Bearings are used with the utmost of confidence.

Confidence enriched by years of successful experience with these better bearings...confidence in correct bearing design, precision manufacture, sturdy construction, and sound application...confidence that in the centers of action Hyatts will always serve well and long. Hyatt Bearings Division, General Motors Sales Corporation, Harrison, N. J., Chicago, Pittsburgh, Detroit and San Francisco.

A New *RIHCO* Humidifier Head That Cuts Power Cost in Half



Rihco has always made humidifier heads that used less power than any other atomizers—heads that gave *"More moisture for less money"*. Their economy was due to the exclusive *Rihco* principle of keeping the water under controlled pressure as well as the air. This enabled them to operate at a lower air pressure than gravity atomizers.

Now *Rihco* presents a head that not only uses less than half the power needed for gravity atomizers, but operates at the same air pressure as the gravity heads.

Think what this means to a mill that now has a gravity atomizer system and needs more humidity! Simply take out any number of ordinary gravity heads and replace with twice as many *Rihco* Type B heads and a simple control valve to regulate the water pressure.

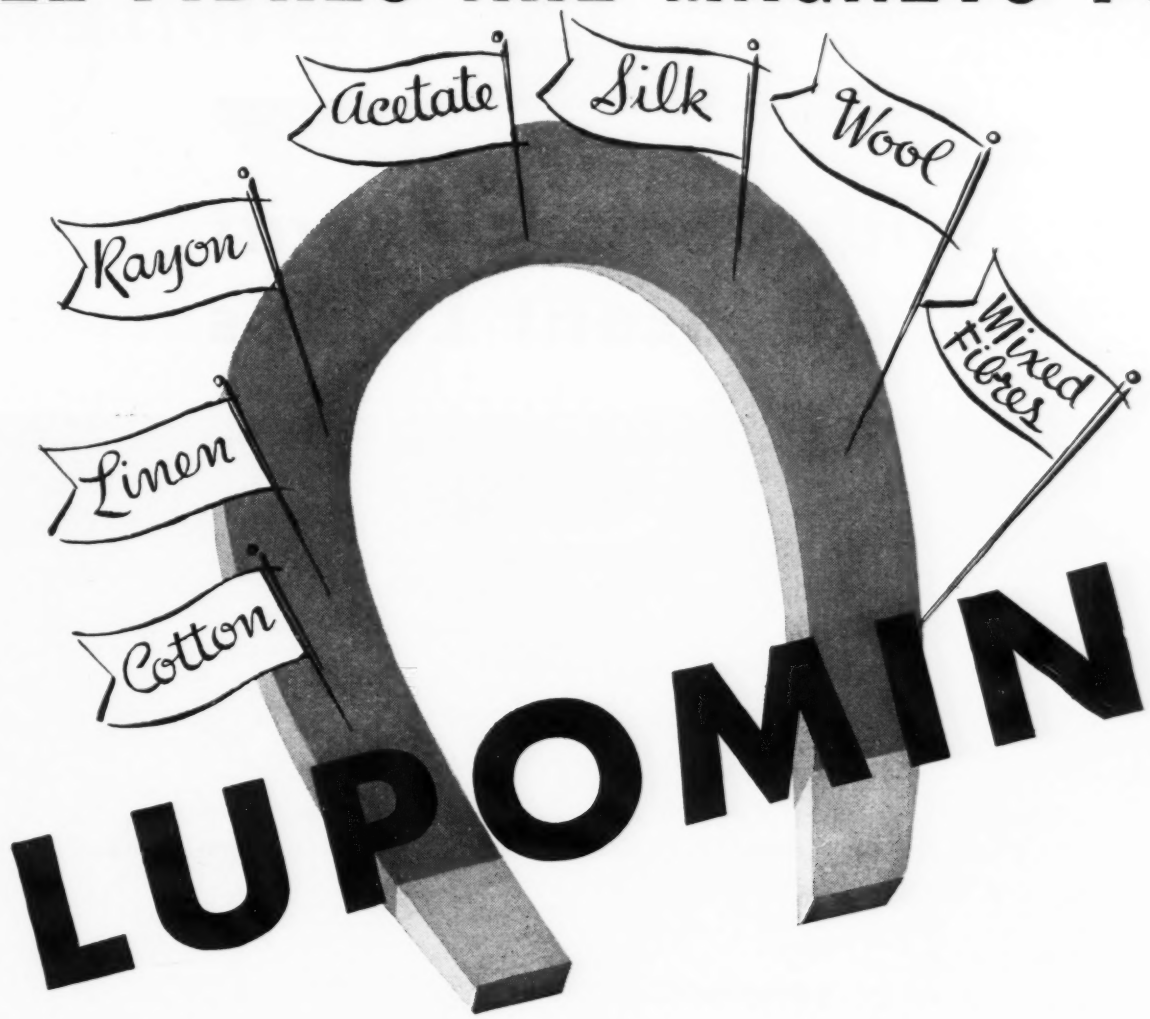
Without changing the compressor or the motor or the water or air mains, the *Rihco* Type B heads can give up to twice as much humidification with no increase in any operating cost, except the additional water used. In a mill adequately humidified, replacing with *Rihco* Type B heads will cut the power bill in half.

Southern Selling Agents

AldricH MachinE

Greenwood, WorkS South Carolina

ALL FIBRES ARE MAGNETS FOR



For a smooth, supple hand—odorless finish—bright print colors—use Lupomin

Lupomin is a cation-active material substantive to the fibres and therefore a dilute bath is exhausted in a short time. A small quantity of Lupomin gives a supple and smooth hand to cotton, linen, rayon, acetate, silk, wool, and mixed fibres.

The small quantities necessary make Lupomin an economical softening agent—excellent results are obtainable at low cost.

Silk, cotton, and rayon hosiery may be after-treated with Lupomin for a full and firm hand.

Lupomin, used on print goods after washing, acts as a softener and improves the fastness of ground colors and printed shades to bleeding, crocking, and wet-pressing.

Write today for free samples.

USE LUPOMIN TO INSURE:

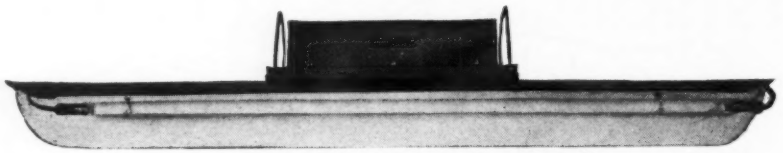
- Smooth, supple hand
- Lubricated yarn
- Drapy fabrics
- Odorless finish
- Strong yarn
- Bright shades
- Bright print colors
- Fast-colored discharges
- No bronzing of sulphur colors
- No bleeding
- No crocking
- No mark-off on wet-pressing

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn.
Midwestern Distributor: Bradley F. Marthens, Milwaukee, Wisc.

PUT SHADOWS TO WORK



with Cooper Hewitt Fluorescent Lamps

You can actually harness shadows and make them work for you with an "engineered" installation of Cooper Hewitt Fluorescent lamps. Directional control of shadows, made possible by the long-tube mercury lamps, provides the proper contrast along each thread for easy seeing. Shadow fighting, breeding an unnecessary nervous tension, is thus eliminated. The result—no eye fatigue, less rejects, more profitable production.

With the high illumination levels required in the textile mill for good seeing, the need for shadow control is more important than ever. That's why "controlled lighting" supplied by Cooper Hewitt Fluorescent lamps is preferred in textile plants. Cooper Hewitt lighting is "better than daylight", too, because it is never obscured at the moment you need it most. Control of shadows will save you money by supplying another control over production. Write now to the General Electric Vapor Lamp Company, 853 Adams Street, Hoboken, New Jersey.

GENERAL ELECTRIC VAPOR LAMP COMPANY

953F

There is no "short-cut"

to scientific design and quality that endures.....

1898 Origination of the Flat Steel Heddle in the U.S.A.

41 YEARS STEADY IMPROVEMENT TO-

1939 Perfection

QUALITY LOOM HARNESS EQUIPMENT

TRADE MARK

Stehedco

HEDDLES · FRAMES
REEDS · ACCESSORIES

Steel Heddle Mfg. Co.

"STEHEDCO" HEDDLES · REEDS · FRAMES AND HARNESS ACCESSORIES.

2100 W. Allegheny Ave.
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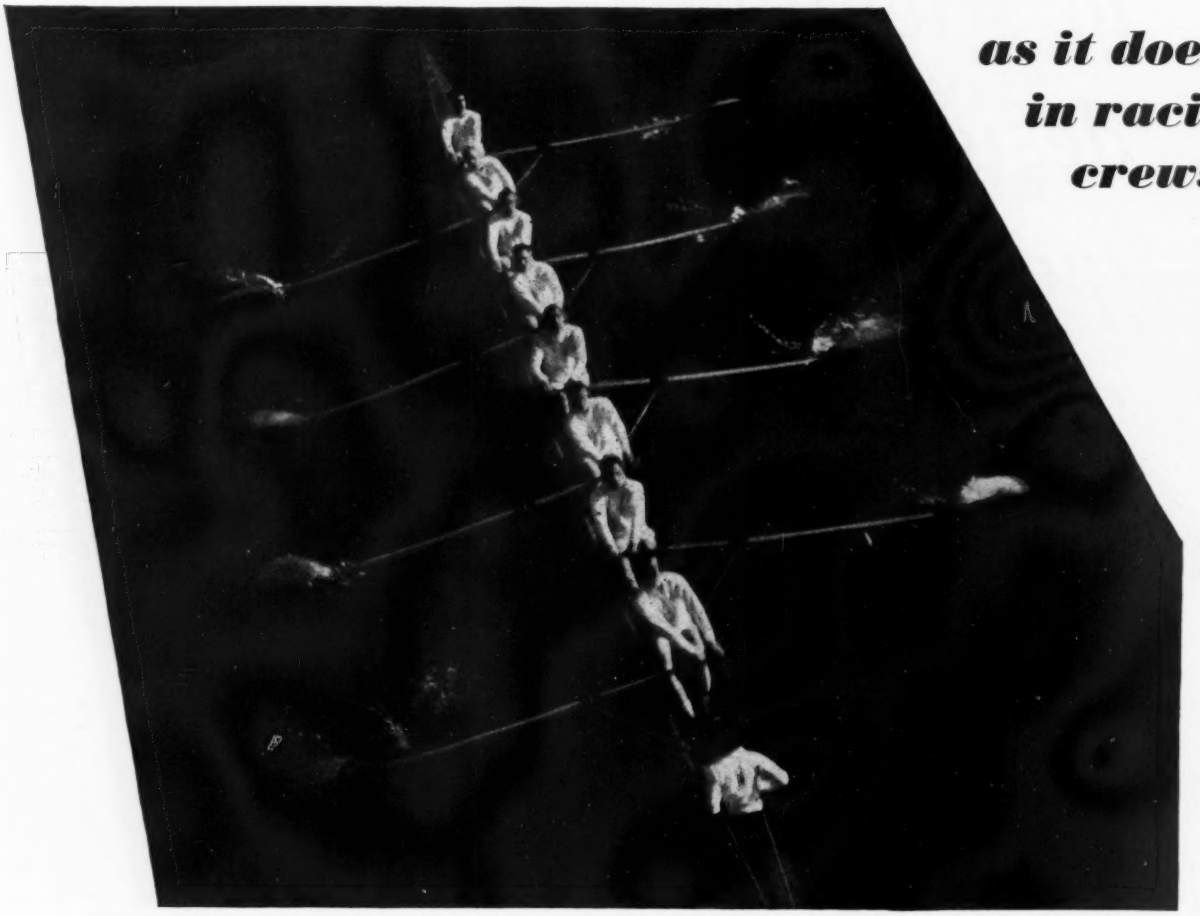
Precision plays a part in building

TUFFERIZED Card Clothing . . .

PATENT APPLIED FOR



as it does in racing crews

The *new* TUFFERIZED Card Clothing requires precision accuracy, too. New precision machines manned by master craftsmen create a new excellence in TUFFERIZED Card Clothing. Wires are cut clean and sharp to precisely the same length without wire burrs. Then wires are formed with square crowns. Teeth are straight and parallel. Uniform wires are set accurately into the famous patented TUFFER foundation where they fit firmly, flat, and project to exactly the same distance and lie in the same plane. So what! So you can get more accurate and even setting, more uniform carding, more service, more production, and more performance between grindings.

Write for additional information or ask our representative

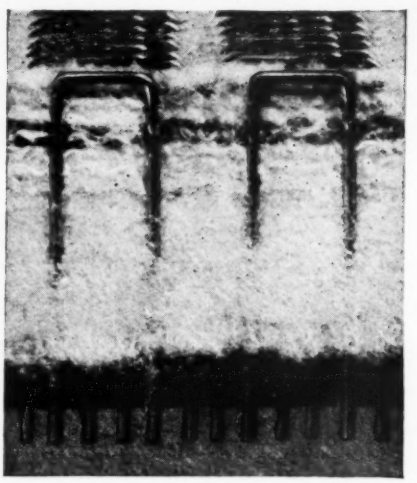
HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas

Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards — Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants — Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant — Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles



Microphotograph shows how Tufferized Card Clothing wires seat square, flat, and firmly into the foundation with wires parallel . . even in length . . spaced uniformly

Reg. U. S. Pat. Off.—Pat. App. for.

THE NEW CATION-ACTIVE SOFTENER WHICH GIVES AN EXTRA SOFT AND EXTRA DURABLE FINISH TO CELLULOSE FABRICS

There is a definite bonding action between Appramine-C and cellulose fabrics which results in a semi-permanent finish,—due to the negative charge ordinarily in the fabrics and the positive charge in Appramine-C solutions • This natural affinity makes possible entirely new and distinctive finishes at a cost so low that many of the cheapest softeners can be economically replaced by Appramine-C • Let us recommend an Appramine-C formula for YOUR cellulose fabrics.

IT'S A WARCO PRODUCT

WARWICK CHEMICAL COMPANY

WEST WARWICK, R. I.

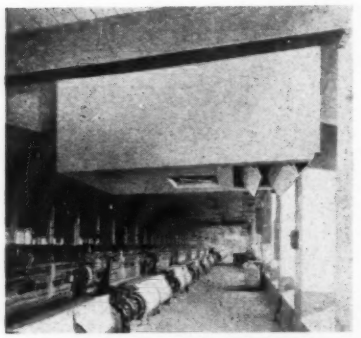
FACTORIES IN WEST WARWICK, R. I. AND ROCK HILL, S. C.

BRANCH OFFICES at Bethlehem, Pa.; Philadelphia, Pa.; Paterson, N. J.; Burlington, N. C.; Griffin, Ga.; 580 Fifth Ave., New York, N. Y.

IMPREGNOLE CORP., Sales Agents for IMPREGNOLE, 580 Fifth Avenue, New York, N. Y.

PARKS Automatic AIRCHANGER

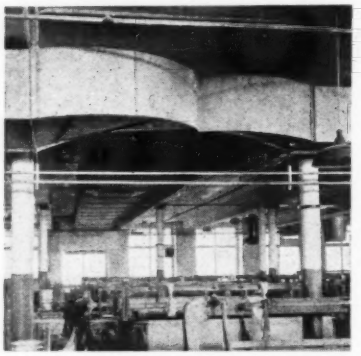
How it works . . . and what makes it different



1

AIR ENTERS

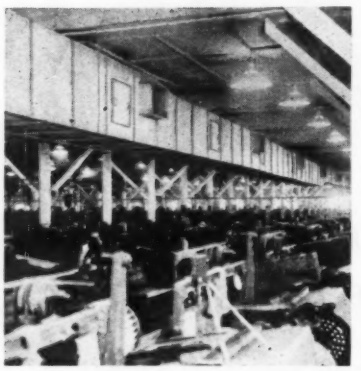
Fan in this mixing chamber draws in air . . . and propels it forward. Air comes from outside (opening not shown) . . . or from room (opening at bottom) or at times from both.



2

. . . IS PUSHED

Pushed forward through ducts at ceiling, the amount of outside air . . . or its mixture with inside air . . . is regulated and automatically balanced with evaporation.



3

IS DISCHARGED

Discharged through a series of duct outlets, air circulates throughout the room. Free moisture from humidifiers evaporates, heat is removed . . . and marked uniformity, particularly of humidity, results.

4

. . . ESCAPES

The "measured service" air . . . and with it much of the heat . . . escapes through a series of automatic exhaust shutters. With a slight pressure in the room, leakage is outward, increasing uniformity.

What Makes an Airchanger?

Fans? Ventilation? Important, yes. But these do not make an Airchanger. Other systems blow—but are not Airchangers.

The Airchanger, with its automatic humidity regulation, keeps Humidity Constant. Otherwise it isn't an Airchanger.

Other systems can't control air change by the Humidity Regulator. So they fail at Airchanger's most vital spot.

The Parks patented Humidity Psychrostat begins to restrict air change immediately humidity falls off. Knows when to prod the humidifiers or hold 'em back; or when to increase the air change. Knows how to keep them in balance.

Knows how to keep humidifiers running, and get the most out of them for evaporative cooling.

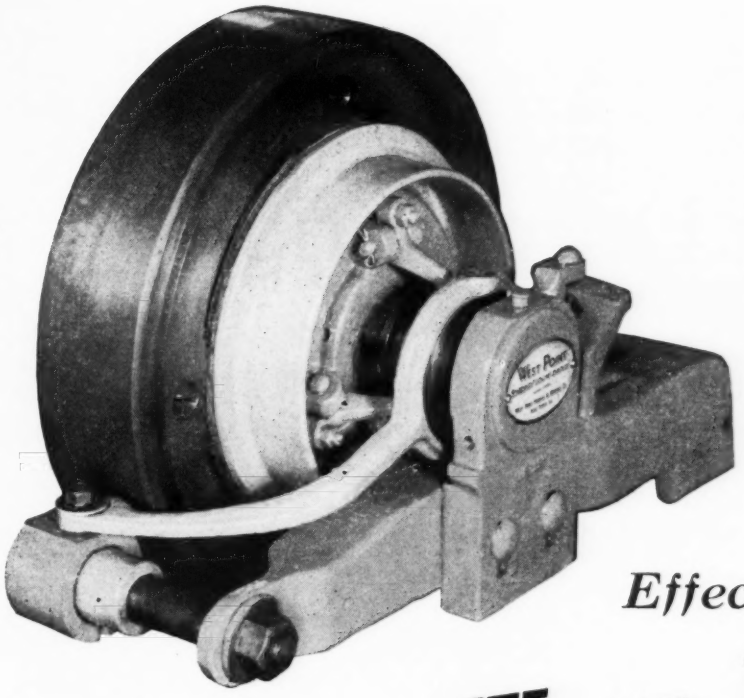
HUMIDITY STAYS PUT.

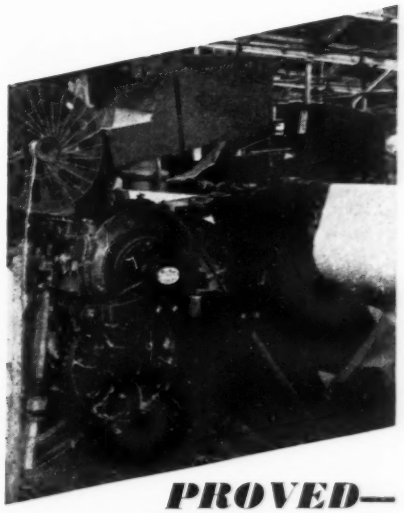
Only the Parks Automatic Airchanger has automatic humidity regulation of this sort. Without it, it isn't an Airchanger.

PARKS *Certified* **CLIMATE**

PARKS-CRAMER CO • FITCHBURG, MASS. • CHARLOTTE, N. C.

ENERGY LOOM DRIVES





PROVED—
By Performance

Effect

WEAVE - ROOM SAVINGS

Lower Operating Costs—Increased Production

Invest In West Point Energy Loom Drives

For effecting savings in Weave Room production, the current trend in improvement is to the Energy Loom Drive, because:

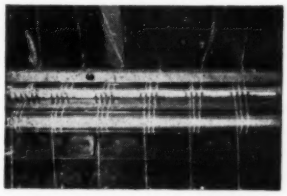
1. It makes possible higher production per loom per hour.
2. It provides for smoother loom operation.
3. It allows the utilization of the group principle of operation, with a reduction in the total power cost per yard of cloth produced.

Operators of machines which develop a fluctuating load can readily realize the possibilities of the Energy Drive, and the saving its principle can effect in time and operating costs.

Write for fully descriptive folder, describing the advantages and operation of the West Point Energy Loom Drive.

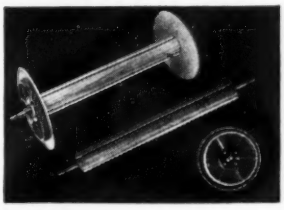
Also manufacturers of special textile machinery, cloth room machinery and textile repair parts.

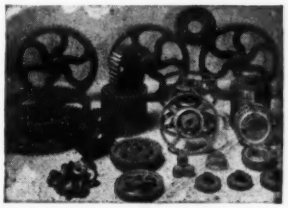
Other WEST POINT Products



THE BACHMAN GUIDE . . . eliminates heavy top rollers. "Blow Outs" reduced about 90%. Permits increase in twister speed.

LOOM BEAMS AND BEAM-HEADS . . . West Point loom beams and beam-heads are superior in their operation and economy.





GEARS . . . Gears of all types—noted for their efficiency and durability.

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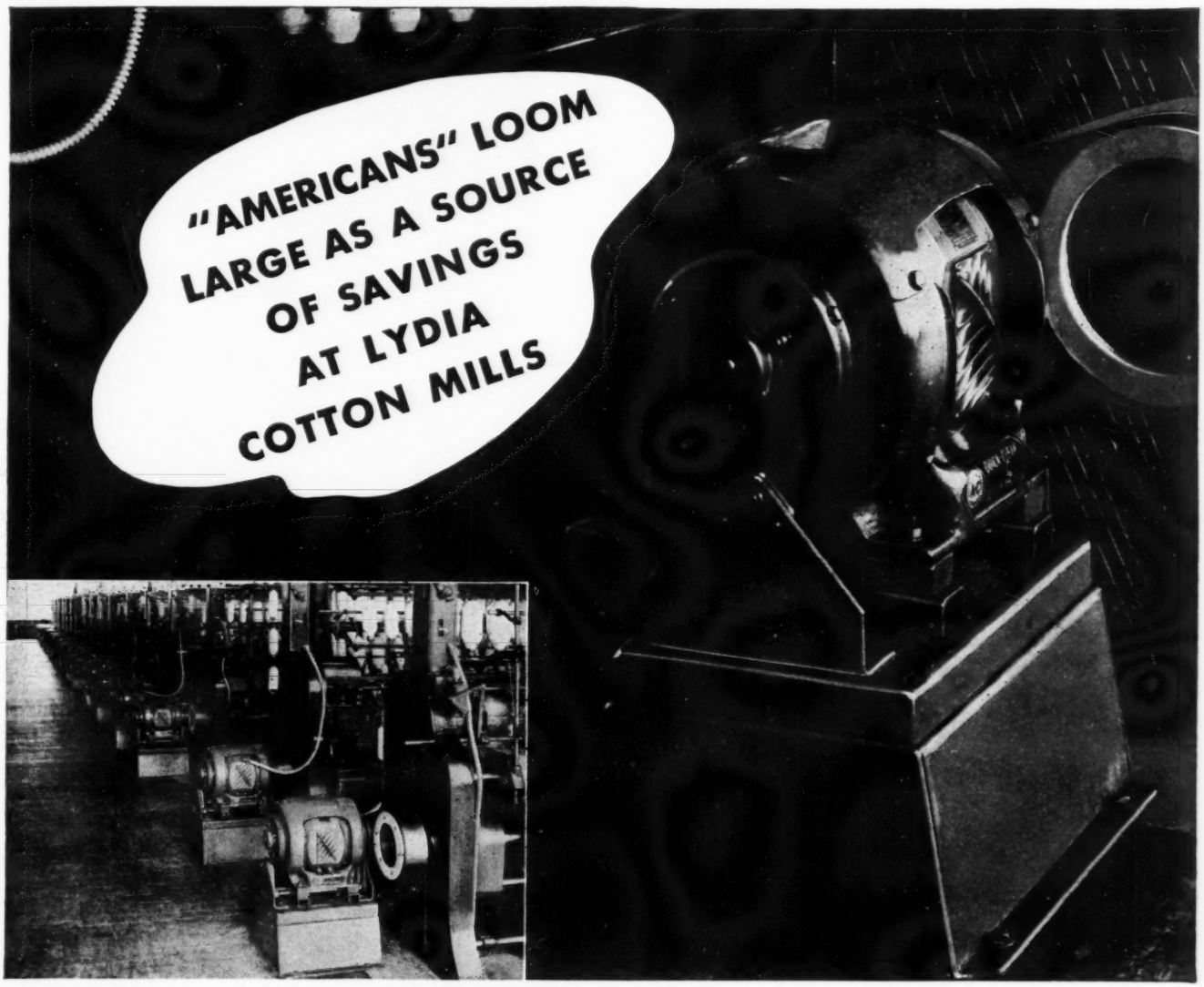


Here's a close-up of a money-*making* investment . . . "American" Tension-Control Motor Base. Those shown here are a few of the 150 in operation on the spinning frames at the Lydia Cotton Mills in Clinton, S. C.

This is just one of the great southern mills in which "American" Motor Bases are proving that they accomplish these savings:

- Substantial savings in power costs . . . important enough to repay the original investment many times.
- Maximum belt and bearing life.
- Sharp reduction in maintenance expense.
- Increased production through uniform speed and uninterrupted operation.

An "American" Motor Base, on most installations, will pay for itself in the first year . . . and every year of further operation represents a definite operating profit. No other type of short center drive will provide such satisfactory operation.

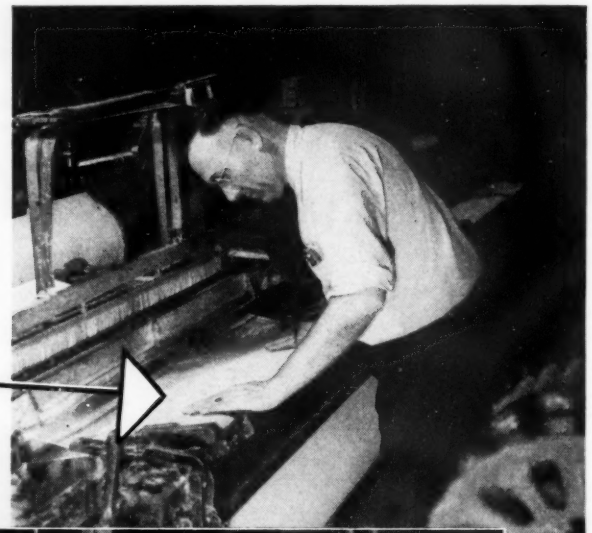
Prove it to your own satisfaction . . . at our expense! We will gladly install an "American" Motor Base for your cost studies . . . without obligation. Write today!

THE AMERICAN PULLEY COMPANY, 4200 WISSAHICKON AVE., PHILADELPHIA, PA.

AMERICAN Tension Control MOTOR BASE

"Better lubrication shows up *Here*"

. . SAYS THIS OVERSEER



"Gulf's HIGHER QUALITY LUBRICANTS *help us get better production with fewer oil stains in the cloth"*

"RIGHT here in the cloth room we see the evidence of better lubrication throughout the mill with Gulf's higher quality lubricants," says this overseer. "Trouble with oil stains in the cloth has been practically eliminated, and there has been a general improvement in production."

When you standardize on Gulf's higher quality oils and greases for all your mechanical equipment, you can expect to get operating improvements all along the line. The safest procedure for you to follow is to call in an experienced Gulf engineer and ask him to look over your equipment and recommend the right lubricants and their proper application for each machine and moving part.

Then you will *know* that your equipment is protected against excessive friction drag, wear, vibration, and the common run of operating difficulties which usually go along with ineffective lubrication.

Gulf's higher quality lubricants are quickly available to you through more than 1100 warehouses from Maine to Texas. Write or 'phone your nearest distributing point.

GULF OIL CORPORATION • GULF REFINING COMPANY

GENERAL OFFICES: GULF BUILDING, PITTSBURGH, PA.

● *The head spinner in another mill says:* "GULFGEM OIL has helped us maintain efficient operation with higher speeds and longer draft. We regard GULFGEM as production insurance in our mill. Properly applied it has helped us improve our production materially."

GULF INDUSTRIAL LUBRICATION

● *The general superintendent of a large mill says:* "I watch this report on the performance of our automatic warpers, and from it I can tell how the spinning room is operating. With GULFGEM OIL in service our spinning frames run smoothly and we have very few broken ends on the warpers."

NEW!

DULUX HIGH-HIDING MILL WHITE AMAZES PLANT OPERATORS WITH ONE-COAT COVERAGE...

"Say—this new DULUX sure does hide!"

HERE'S the finish you have been waiting for!

DULUX High-Hiding Mill White has all the qualities that make DULUX different from other finishes . . . longer-lasting, *whiter* whiteness, lower application cost and greatly lowered maintenance costs.

But in addition to these advantages, DULUX High-Hiding Mill White has another: On many surfaces in good condition, it gives satisfactory results with *only one coat!* Except when present finish is in very poor condition, just one coat of DULUX High-Hiding Mill White will do the job you want. If the present surface is in very bad condition, it may be necessary to apply a priming coat first.

Since normally it requires only one coat, you will need far fewer gallons per job and less time in application. And because of the amazing durability and whiteness retention of DULUX, you will need fewer repaintings. Thus you save on application and on overhead.

For full information about this new finish, just send in the coupon.

SEND FOR THIS FREE BOOK

DU PONT
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DULUX

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HIGH-HIDING MILL WHITE

E. I. du Pont de Nemours & Co. (Inc.), Dept. C-99
Finishes Division, Wilmington, Delaware

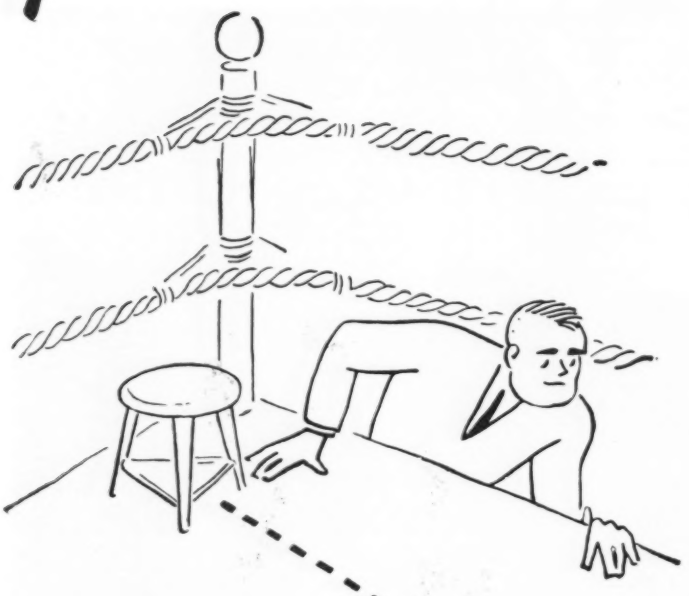
Please see that I get complete information about DULUX High-Hiding Mill White—and your new booklet.

Name .....

Address .....

City ..... State .....

Your Seat-a Ringside Seat!



Forty-four leaders and co-leaders are busy planning the sixteen clinics that will answer 200 problems uppermost in the minds of industrial advertisers.

Here are a few of the subjects:

Extra-curricula activities
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Direct mail for the industrial advertiser
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Market information—how to get it

OTHER EVENTS
YOU WON'T WANT TO MISS

IDENTICAL INTEREST LUNCHEONS
TRADE SHOWS—EXHIBITS—AWARDS
PUBLISHERS' RECEPTION—DINNER—SHOW
N.I.A.A. DAY AT THE WORLD'S FAIR

•

NEW LOW TRANSPORTATION COSTS
THIS YEAR

NO INCREASE IN RATES AT THE HOTEL NEW YORKER

•

GET YOUR RESERVATIONS IN EARLY THIS YEAR

National Industrial Advertisers Association
100 East Ohio Street **Chicago, Illinois**
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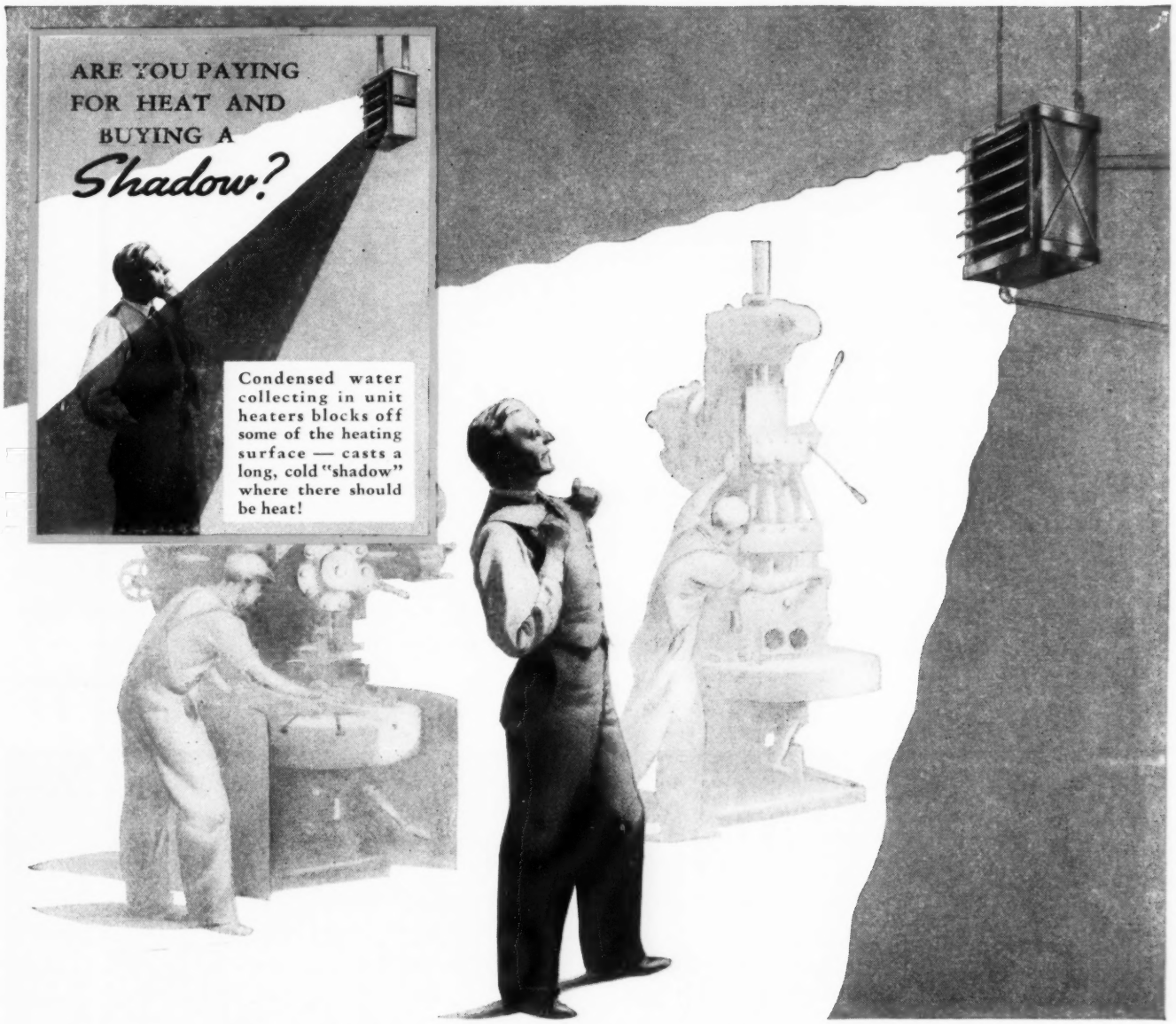
ARE YOU PAYING FOR HEAT AND BUYING A Shadow?
Condensed water collecting in unit heaters blocks off some of the heating surface — casts a long, cold "shadow" where there should be heat!

NO *"SHADOWS"* TO PAY FOR WITH THERMOLIER!

Thermolier's broad, continuous beam of heat is never "shadowed" – because condensate is drained *continuously* by the Internal Cooling Leg, exclusive with Thermolier. All of the heating surface *works*, all of the time.

Grinnell's 50 years of heating experience created the Internal Cooling Leg . . . plus *13 other* outstanding points of superiority. They're all described in the 48-page Thermolier Data Book that covers Thermolier's 3 types and 30 sizes. Send for a copy. Grinnell Company, Inc., Executive Offices, Providence, R. I., branch offices in principal cities of U. S. and Canada.

USERS REPORT:

75 tons less coal used per season — saving 35% — since Thermoliers were installed in a Railway and Dock Shop.

29% less steam consumed, after Thermoliers went into a well-known textile plant.

Manufacturer with over 50 plants averages overall savings of 30%. $50 per day in one plant alone . . . $5500 per year in another.

GRINNELL THERMOLIER

THE UNIT HEATER WITH 14 POINTS OF SUPERIORITY

ABP *Always meant a lot . . .*

NOW ABP MEANS MORE THAN EVER BEFORE . . .

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COTTON

Member of The Associated Business Papers, Inc.

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ELECTROLYTIC HYDROGEN PEROXIDE

SAFETY teams with dependability in the Becco process for the bleaching of wools, silks, cottons, rayons and specialties. For Becco Electrolytic Hydrogen is eminently safe to use, and the resultant bleach is as uniform as it is permanent. Becco reduces bleaching costs in the bargain! Let Becco Technical Service prove it with practical, sensible, ***confidential*** pointers on the advantages of Becco to your product. Write: Becco Sales Corporation, Buffalo, N. Y.; Boston, New York City, Philadelphia, Chicago and Charlotte.

plus

BECCO TECHNICAL SERVICE.

Cleans...

ceiling and machines!

Better running work

Fewer gouts or bunches

Less ends-down

Spinners handle more sides

Lower cleaning costs

Reduced machine stoppage

No lost production

Full advantage of automatic cleaning can be attained only when lint is kept from accumulating on the ceiling and on machines. Clean ceilings, like clean frames, help produce better-running yarn.

American MonoRail Cleaners perform both operations. Swirling currents from a special distributor circulate around the guides and creel boards while a high velocity column of air is directed toward the ceiling.

Automatic cleaning of this type helps to reduce gouts and ends-down, lets spinners handle more sides. Experienced textile engineers will gladly submit definite figures to show potential savings in your mill. Write for copy of new book offering complete information.

THE AMERICAN MONORAIL CO.
13106 Athens Ave. Cleveland, Ohio

AMERICAN MONORAIL

Automatic **OVERHEAD CLEANER**

FOR SPINNING, WINDING, SPOOLING AND WARPING

VOL. 103 SEPTEMBER, 1939 NO. 9

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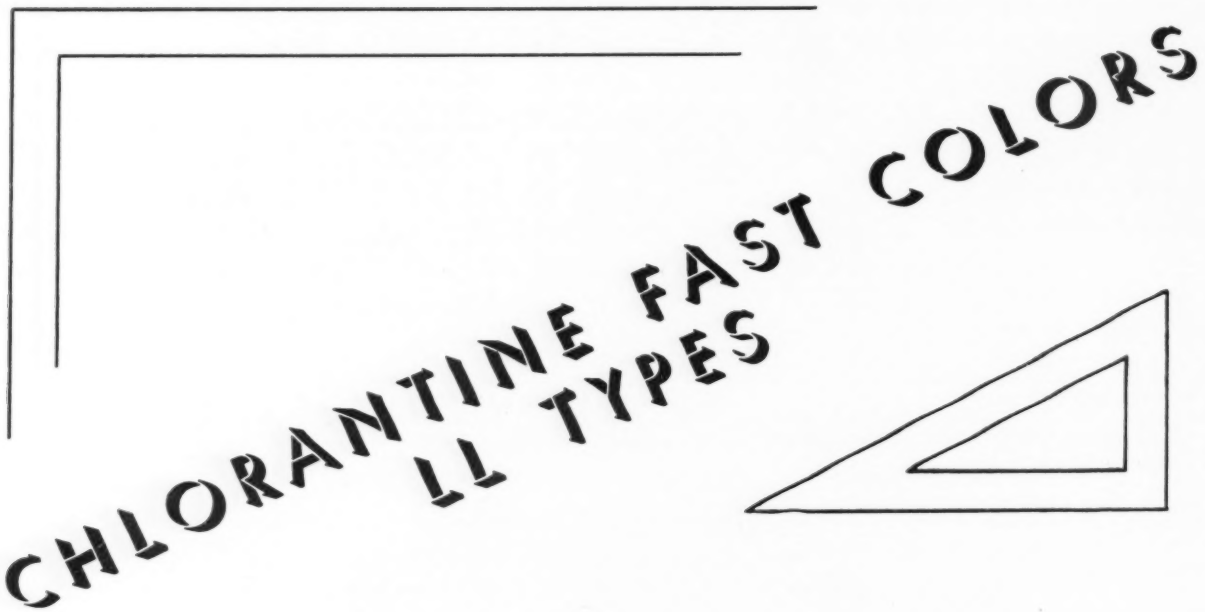

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More Requests for Pierce Dyeing Articles

"The July issue of COTTON carries the seventh installment of an article 'Modern Methods of Dyeing', by Edward W. Pierce. * * * I also notice you are considering publishing all of these articles in booklet form, but if they are available, we would appreciate tear sheets of the first six articles."

H. V. MERCER
The American Rolling Mill Co.,
Middletown, Ohio.

"I have been reading your magazine for the last two years with great gain. I am especially interested in the series on 'Modern Methods of Dyeing' by Edward W. Pierce."

H. V. SIMPSON
Anderson, S. C.

"I would appreciate receiving the first six articles of the series on 'Modern Methods of Dyeing' now running in COTTON."

O. T. HARRINGTON
Secretary,
Stonewall Cotton Mills,
Stonewall, Miss.

"We have noted with interest the series of articles currently being published in COTTON by Edward W. Pierce entitled 'Modern Methods of Dyeing'. We understand that there are in all eight installments and write to inquire if it will be possible to get reprints of the complete series."

C. J. BIANOWICZ
The International Nickel Co.,
New York City.

◆

From Worth Street

"I understand you have a record available of 24 articles on spun rayon carried in COTTON within the past three years, and will very much appreciate your sending me a copy."

W. E. POWER, Jr.
Joshua L. Baily & Co.

(Copies of this record of spun rayon articles, now augmented by the current series (see page 52 of this issue) are available upon request.)

◆

Quandary

We debated with ourselves whether to omit the name of the inquirer, or the name of the company he is seeking, in the letter below, finally deciding on the latter course.

"Will you please send me the address of the _____ ___ _____ __, as I do not find their advertisement in COTTON, and am very anxious to get in touch with Mr. _____, with a view of the possible purchase of some machines."

D. W. ANDERSON
Treasurer,
Pacolet Mfg. Co.
Judson Mills,
Monarch Mills.

Happily, when the _____ ___ _____ __ does any advertising, the manager, Mr. _____, puts it in COTTON. But evidently Mr. Anderson shares our belief that he doesn't do it frequently enough.

Berkshire at Reading

Atop one of the huge buildings that comprise Berkshire Knitting Mills, Reading, Pa., this sign shines forth in dignified and prideful identification of this, the largest full-fashioned knitting mill in the industry. The plant, established in 1906, now contains 1,100 full-fashioned knitting machines, employs approximately 6,000 people. It is one of the Wyomissing Industries, founded and operated by Henry Janssen and Ferdinand Thun, its companions and nearby neighbors being the Textile Machine Works and the Narrow Fabrics Company.

Hugo Hemmerich, the general manager, heads a list of Berkshire executives who are readers of "Cotton" . . . . . .

◆

FOREIGN DEPARTMENT

Cross-Index

"We shall thank you to send us, free of cost, a copy of the Cross-Index of Articles appearing in COTTON during 1938."

The MORARJEE GOCULDAS
SPG. & WVG. CO., Ltd.

◆

Heil Hitler!

"Wir bitten um Zusendung des Aufsatzes von R. A. Butler (COTTON 1938, 1. 51) 1t. Ihrem Heft XX Band, Lieferung 4, April 1939, Seite 300.

"Heil Hitler!"

A. MELCHIOR & COMPANY
Nurtingen, Germany.

(We omitted the Heil Roosevelt in sending this reader two tear sheets of the articles requested.)

◆

TEXTILE CALENDAR

(Date for Thanksgiving Not Considered Here)

American Association of Textile Chemists and Colorists (annual convention), September 15 and 16, 1939, Copley-Plaza Hotel, Boston, Mass.

Fall Meeting of Textile Operating Executives of Georgia (slashing and weaving discussion), Georgia Tech, Atlanta, Saturday, September 23, 1939.

Carolina Yarn Association, annual outing and golf tournament, Carolina Inn, Pinehurst, N. C., October 27 and 28, 1939.

From New England

"Thanks very much for your assistance in getting me the information I wanted. Your prompt reply is a good indication of the service your magazine renders."

BERNARD F. BRADY
Overseer of Carding,
Pepperell Mfg. Co.,
Biddeford, Maine.

(Mr. Brady refers to a request from him for further detailed information, with explanatory sketch, from "The Old Card Doctor", in connection with a contribution by the latter in the July issue. We are always glad to follow through on requests for additional details prompted by any of the articles in the magazine.)

◆

Full-Fashioned Study

"I have just finished reading the Cobert articles on 'The Maintenance and Fixing of Full-Fashioned Hosiery Machines' . . . They fill a much neglected part of a knitter's education. We have formed a class which meets at regular intervals to study these articles. We have also organized ourselves against the radical influence around Philadelphia and elsewhere as 'The Eastern Shore Hosiery Association, Inc.', celebrating our second anniversary this week. . . . Would be glad to hear from any similar employee groups."

◆

Poorly Ginned Cotton

"Thank you very much for the information forwarded on the matter of poorly ginned cotton . . . the information was very complete. . . . "

ROLAND H. GRAY
Goodyear Decatur Mills,
Decatur, Alabama.

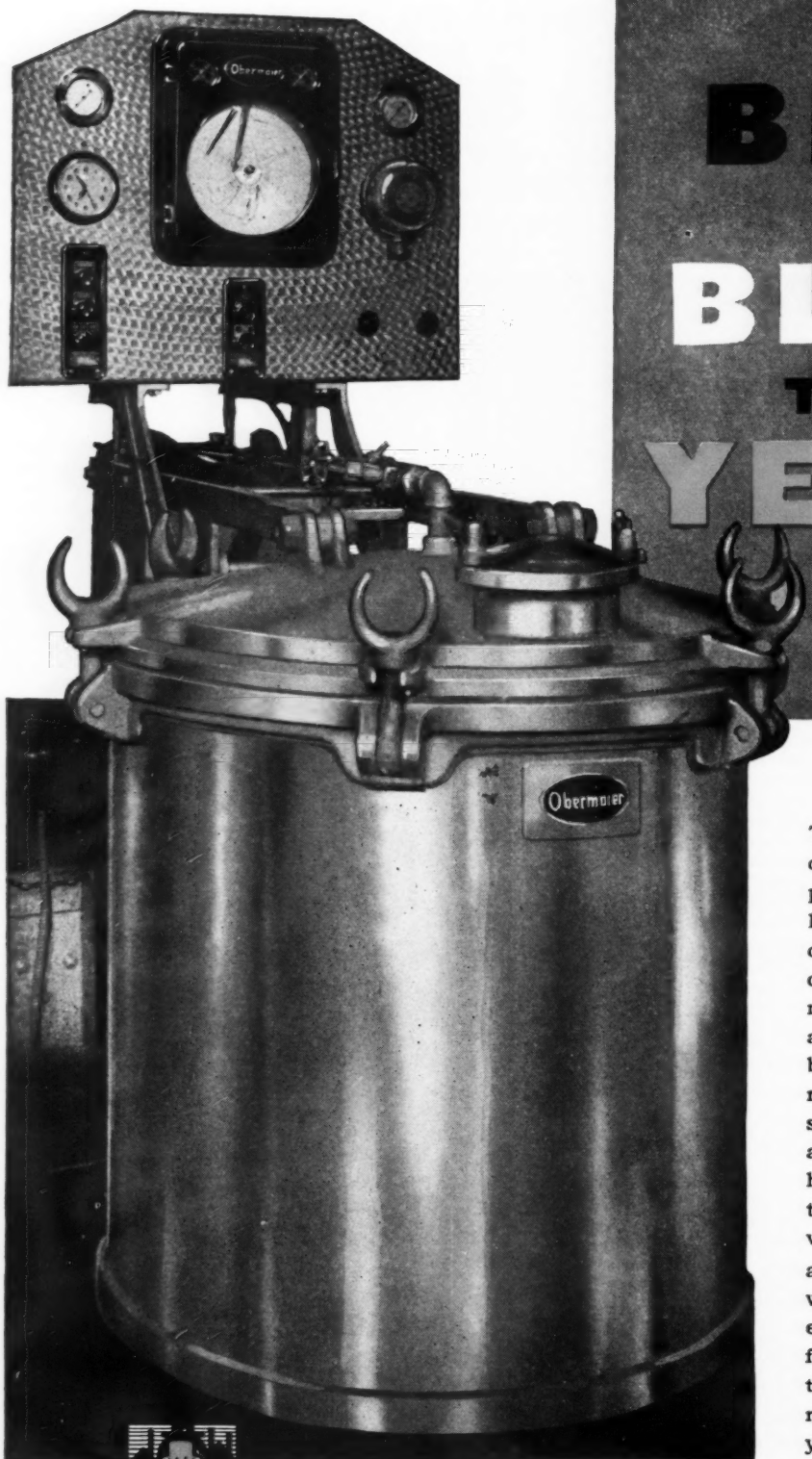
◆

"Rah and Hank"

Undoubtedly this interests us more than anyone else, but we pass it along. In 1924, COTTON published, under the title "Rah and Hank", a remarkable little article dealing with the problems involved in breaking textile school graduates in on mill work. It was reprinted in the June 1936 issue. Immediately, we had a request from J. C. COWAN, JR., vice-president in charge of manufacturing, Burlington Mills Corporation, Greensboro, N. C., for enough reprints of it to distribute among the new crop of textile school graduates he was taking in. A similar request came from him last year. We now come to the third chapter, written July 19, 1939:

"Last year and the year before you were kind enough to supply us with several copies of the now famous article 'Rah and Hank'. We have come around to the season again when we would like to distribute copies of this article to the textile school graduates we have taken on, and wonder if you would be kind enough to supply us with around 25 copies."

JAS. L. WILLIAMS
Plant Personnel Director,
Burlington Mills Corporation,
Greensboro, N. C.



DYE BLACK THEN BLEACH THEN RUN YELLOW

...only a quick rinsing between them

They don't maintain separate equipment for dark and light colors, and for bleaching, in this progressive dyehouse. Nor do they spend lengthy time scrubbing and bleaching between color changes in order to avoid carry-overs and damaged goods. Just a quick rinse is all that's necessary, for even dark colors flush cleanly away. This worthwhile economy is possible because these package dyeing machines are made from ENDURO... the corrosion-resisting stainless steel whose hard, smooth surface allows no dye penetration... presents no foothold for carry-overs. But this cost-cutting feature is only one of many which ENDURO provides. Others, such as ENDURO'S resistance to all textile solutions... ENDURO'S high strength which overcomes warpage and wear... and the ease and facility with which ENDURO can be fabricated and welded... all combine to make this the preferred metal for dyehouse equipment. Let us send you all the facts. Address your inquiry to Dept. C● at Cleveland. Republic Steel Corporation, General Offices: Cleveland, O.; Alloy Steel Div., Massillon, O.

REPUBLIC STEEL
REG. U. S. PAT. OFF.

This modern package dyeing machine, equipped with automatic reversing device and temperature control, is built throughout of ENDURO* Stainless Steel. *Reg. U. S. Pat. Off.

ENDURO *Stainless* STEEL

STEEL AND TUBES, INC. • TRUSCON STEEL COMPANY • UNION DRAWN STEEL DIVISION
NILES STEEL PRODUCTS DIVISION • BERGER MANUFACTURING DIVISION

COTTON
SERVING THE
Textile Industries

September, 1939 Vol. 103 No. 9

SAFETY—If You Want It

By Frazer Patterson

Insurance manager and safety director, W. C. Bradley Co.; Eagle & Phenix Mills; Columbus Mfg. Co.; and Bradley Mfg. Co.; Columbus, Ga.

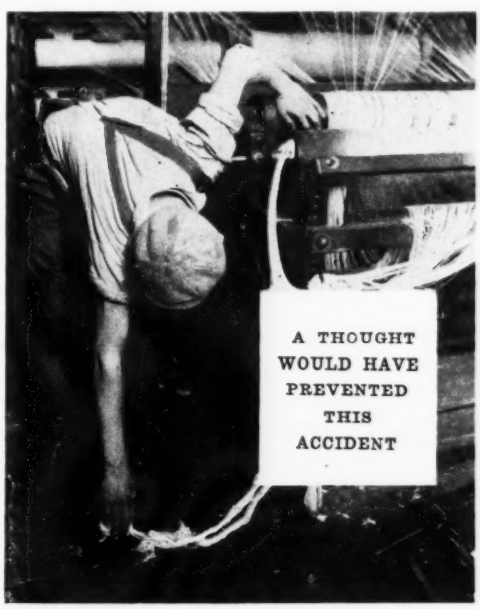
ACCIDENTS COST THE TEXTILE MILL MONEY. It is estimated that for every $60.00 the insurance company pays out in claims, the mill pays $100.00 in premium, and that for every $100.00 it pays in premium, it loses $400.00 in ruined material, loss of time of those near where the accident occurred, time taken by supervisors in caring for injured employee, ruined stock, and broken machinery. This does not take into account the bad effect that accidents have on the public relations of a company or the ill will they generate in employee relations.

But if accidents cost the mill money, material, and ill will, they cost the employees even more in aches, pain, and suffering. One employee was making $22.00 a week. He got a small cut on his hand and did not get treatment for same. It became infected and he was out seven days—not long enough to get any compensation, which begins the eighth day in this state. By not taking the time to get treatment, which is gladly provided, it cost the employee himself $22.00.

It is to the employee's advantage to learn the dangers of his job and to form safe working habits. I saw an employee one morning who had reached in a picker and got his hand mangled. His hand is about well now, but three fingers are missing. He has suffered, but through all the years before him he will look at that piece of a hand, and think "If I had only obeyed instructions—if I had only been careful, I would have a hand now that I could use."

Maybe those who get hurt are entirely responsible. Maybe they are only partly responsible. But the mill, too, has its responsibility and it cannot discharge that responsibility by just providing safeguards for machinery and protective goggles or clothing. For if the mill guarded every machine in the best possible way and fixed every unsafe condition, it would eliminate only 15 per cent of its accidents, *for 85 per cent of the accidents are man failure—not machine failure.* But man failure is also an executive responsibility. It is the managements' job to train their men and women. You insist that the employee do his work in the best possible way to get production and quality, and you spend time training him to be a better workman. Do you exercise the same diligence in training him to work safely, to think safety, to form safe habits? If the employee that was injured comes to you, his overseer or second hand, and says, "Why didn't you make me use that guard? Why didn't you make me obey your safety instructions? Then I would have a hand and not a nub"—what can you say to him?

The management is responsible not only for providing a safe place to work and adequate guards where needed, but the greatest responsibility is the training of the employees in safe working habits. I use the word "habits" intentionally. Safety must become a habit, and just as you practice safety unconsciously when you take a sip of coffee before you take a big swallow, so must we get our employees to work in the safe way, automatically.



Courtesy National Safety Council, Inc.

'Low Bridge"

During the barge days in New York State, when barges moved up and down the river with their freight, and families lived and grew up on them, it became known that a famous French actress would be at a certain theater. Two barge-

men heard about it and went to the show. When the famous French actress appeared, one of them said to the other, "Why, Mike, that's nobody but Maggie Murphy, who grew up on a barge." The other said, "It couldn't be." Finally, they bet $5.00 as to who was right, and Mike said, "How are you going to prove it?" And the other said, "I'll prove it." He put his hands to his mouth and hollered, "LOW BRIDGE," and the beautiful French actress dropped flat on the stage.

O.K.-GO ON IN—BUT THIS PLACE SURE IS GETTING FULL OF FOLKS HERE ON ACCOUNT OF CARELESS ACCIDENTS
IT TAKES ONLY ONE MOMENT TO GET KILLED—BUT IT'S A LONG TIME THROUGH ETERNITY

Maggie Murphy had learned the danger of low bridges when a child living on a river barge. She had learned it so well that she acted automatically. Our job is similar. We must show our employees the hazards of the job, but our responsibility does not end until they work in a safe way—automatically—habitually.

How can we train our employees in safe working habits? Safety must start at the top with top management. The president, vice-president, general manager, and superintendents must be sold on safety. They must be sincerely interested in preventing accidents, for unless they are enthusiastic about safety, the overseers, second hands, and operators are going to be lukewarm. Enthusiasm engenders enthusiasm. You can't pass it on unless you have it.

Management shows that it is 100 per cent for safety when it provides money for necessary safeguards, repairs, etc., to make a safe working place; when it convinces the overseers and other supervisors that an important part of their job is to train their employees to work safely. One company put it to their overseers in these words: "Your accident record reflects your ability to train your workers in safe thinking and safe habits."

Training the Operatives

How can the overseer train his employees in the safe working habits?

1. He must study the hazards in his department. This requires the ability to foresee accidents. But this ability can be acquired by visualizing the hazards in his department and what would happen if this or that were done wrong. The more we think and study safety, the more clearly we can foresee hazards. The reading of safety literature helps to open our eyes to accident hazards and ways to prevent same.

2. He must study each job in his department. First, the dangers of the job; second, what the employee should do to keep from getting hurt; third, what the employee should avoid doing to prevent injury to himself.

The National Safety Council, 20 N. Wacker Drive, Chicago, Illinois, has formulated for the members of the Council, and there are many thousand members, including nearly all "big business", a set of 100 Safety Practice Pamphlets which tell how to do safely nearly all the dangerous jobs in industry. They also publish Safety Instruction Cards which give the important safety instructions necessary on such jobs as the "Oiler", "Maintenance and Repair Men", "Climbing Ladders", "Working from Ladders", "Falling Hazards", "Hand Trucks", etc. The Council publishes excellent safety posters and many other things that will help build a safety program. In fact, it is the authority on safety. The council is the fountain head of safety information, and much material that will help the overseer put over his safety program can be obtained from it.

3. He must instruct his employees in regard to safe performance of their job. He must show them dangerous conditions. He must tell them of unsafe practices. But his supervision is not ended with telling. The employees must understand. They must learn to do it the safe way, and someone must watch them until they acquire safety habits. Some mills put new employees under the guidance of old employees until they learn to work safely.

4. He should use posters to help him carry the safety message. If posters and advertising sell other things, they can sell safety, too!

5. He may use a contest between the different rooms in his department. If people know that some other department has operated without an accident, they feel that they can also.

6. He may ask all his employees to sign a pledge to work safely. Then if they do their work in an unsafe manner, he can remind them of their pledge.

Safety in the Preparatory Departments

Let's look at some of the safety instructions needed in the opening, picking, and carding departments.

1. To the cotton bale handler: See that the cotton truck is in good condition. Cotter keys are safer than nails to hold separate wheels on. If there are no rests for handles, you will probably skin your hand in putting them on floor; without rests, it is harder to lift. Don't pull trucks—push them. Then if you stumble and fall, it won't fall on you.

2. In removing bale of cotton from stack in warehouse, be sure to place other bales so that they will not fall or roll.

3. See that cotton hook is in good condition. Be sure you have a good hold with hook before you pull or lift. Don't jerk—you jerk your body more than you do the bale.

4. When lifting, lift with the leg muscles by bending the knees. They can "take it". The back muscles can't. Keep the back straight and avoid strain.

5. When a cotton hook strikes a bale tie, it sometimes creates a spark. This happened in one opener room recently and the spark ignited some lint and the flame traveled down the open bales of

The accident rate in the textile industry for 1938 was 24 per cent lower in frequency and 5 per cent lower in severity than in 1937, according to the National Safety Council, Inc., Chicago, Ill.

This is quite an improvement in frequency, but looking at it on a long range basis, since 1926 the severity rate has risen 18 per cent. As compared with all industry and based on reports from 156 mills, the frequency rate is 45 per cent below the average for all industries and the severity rate is 61 per cent lower than the general average. Textile mills ranked fourth in both frequency and severity among 30 major industries.

Machines such as cards, looms, twisters, etc., caused 63 per cent of all serious injury, while working surfaces such as ladders, platforms, floors, etc., were next.

The major cause of all accidents occurred when the operative was working on moving machinery with hands and fingers and cleaning with the hands instead of the proper tools. Undue haste was also a large factor in accidents.

Personal causes accounted for 80 per cent of all accidents because of improper attitudes, particularly disobedience of instructions, recklessness, haste and abstraction.

[The cartoons on pages 48 and 49 are the work of L. D. O'Steen, of Tallassee (Ala.) Mills, who regularly draws such messages for use in the mills' safety work.]

cotton. Before the fire could be extinguished, much damage had been done.

6. In removing the ties from a bale, keep your face as far away as possible. Look to see that no one is near enough to get hit by bale tie when it snaps off. Use a long handle hook in removing ties from bales of compress cotton. One employee was removing bale tie; it came off and struck him in the forehead just above the eye. If it had struck his eye, he would probably be wearing a glass eye now —and glass eyes don't see. Deposit all clasps, iron bands, and pieces of iron bands in containers provided for same immediately after they are removed. If these pieces get into a machine they may cause a fire. Keep them off the floor!

7. The bale breaker machine operator should be instructed not to remove a choke from same while machine is in motion. The shaft on some of these machines extends out into aisles. A seemingly smooth shaft is dangerous if it catches a sleeve or neck tie or the overalls of an employee, for in many cases it means serious injury or death. Metal cups can be made or obtained for covering same, and then if clothing catches on these cups, the cup will stop —the shaft won't.

Picker Room: It is said that 17 per cent of all lost time injuries in textile mills result from accidents in the picker room. One reason is that picker accidents are usually serious.

A picker tender looked through glass door at the screen cylinder and saw the ends of a choke in the pin beater near the hopper, so he opened the door and attempted to reach back and remove the choke in pin beater. He reached as far as the beater and it hit his hand, mangling same. It tore the ligaments out of three fingers and a lot of the flesh off the hand. Also it broke several of the bones in same. The doctor saved the fingers, but recently had to amputate three fingers because the employee could not use them and they were in the way. All employees in picker room should know the danger of picker machine and should be instructed not to remove choke or work on same while it is in motion.

All beater covers should have interlock guards so they cannot be opened while the picker is in motion; also, any door through which the beater can be reached should have an interlock guard.

The horizontal shaft that runs on the side of a picker, near the doors where employees clean out under picker, is dangerous. If possible, employee should clean out this door on other side of picker.

A rather odd, but serious, accident occurred in a mill not long ago. A piece of shafting broke and came out of the ceiling and struck an employee who was about 10 feet away. It crushed his leg which had to be amputated. It pays to check shafting!

The main hazard in the card room is the handling of card machine belts. There are more fatal accidents on card belts than any other place in the mill. I know of one family in which three men have been killed by card belts.

Recently a card stripper was stripping a card. He had put on his rope belt and put his hand against the drive belt to shift same to the operating pulley. The belt caught his hand and knocked it into the pulley. This threw him against the card, cutting his lips, his head, and fracturing his skull. This man had done this operation for 10 years. The cause of the accident was inattention to his job. He was probably looking at someone and not at the belt, and did not see how close he was putting his hand to the pulley.

The jobs of the card grinder, card stripper, and card fixer should be studied carefully from a safety standpoint. The conditions under which they work and the way they work should be observed. They should be continually instructed in safe practices.

Only ONE Fuse-
IF IT GETS BLOWN-NOTHING CAN REPLACE IT
IF THE AIR FROM A BLOW-PIPE STRIKES HERE-
SILENCE
AND NOT EVEN MUCH OF THAT
KEEP BLOW-PIPES AWAY

A card stripper was stripping a card and his arm got caught in the machine and he was thrown against the pulley. His wrist was sprained and he was out 13 days. A machine fixer got his hand caught in belt and his wrist twisted. He was out four days. Another cause of serious accidents on cards is the card grinder trying to set the flats on top of the card while the card machine is in motion.

The cylinder on the card machine is turning at about 165 r.p.m. and the fine wires on this cylinder

(Continued on page 62.)

Cotton Production East of the Mississippi Holds Its Own

Prepared Especially for "Cotton"

By Stanley B. Hunt

Textile Economics Bureau, Inc.

THERE IS a widely-held opinion that the Southeast has continued to fall behind in cotton production relative to the cotton-producing states west of the Mississippi River.

In Table I and Chart A is shown the average annual cotton production in the United States for selected periods, as well as the percentage of this cotton grown in the East and in the West (the Mississippi River being used as the dividing line).

It will be seen that the East typically produced from 53 to 54 per cent of the total cotton crop for the decades 1900 to 1919. Then in the decade of the twenties, the relative production of the eastern section declined to an average of about 43 per cent. Finally, for the nine years 1930 to 1938, the East's percentage increased slightly to a typical 44 per cent. This same tendency also is seen in the two individual crop years of 1937 and 1938.

Thus the relative production of cotton in the East suffered quite a decline during the twenties, but since that time has held its own in relation to the Western production.

A number of factors are involved in this simple and composite statement, however. For example, Table II and Chart B show that the cotton acreage harvested in the East has declined from about 53 per cent of the total United States acreage to approximately 38 per cent of the total in the last 35 years. This point principally reflects the opening up of large areas in Texas to cotton cultivation over that period.

Summarized to this point, the Eastern cotton producers had only about 38 per cent of the total cotton acreage during the nine-year period ending 1938, yet they produced 44 per cent of the total cotton. On the other hand, the Western producers, with 62 per cent of the acreage, produced but 56 per cent of the total cotton crop.

These substantial differences, in turn, can mean only that the average yield per acre is higher in the East than it is in the West. Table III and Chart C demonstrate this fact conclusively. Thus the yield per acre for the nine-year period ending 1938 aver-

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EDITOR'S NOTE: An informal request from a subscriber for information as to trends in cotton production is responsible for this article. The inquirer had said, in a newspaper interview, that the area East of the Mississippi River was losing its cotton production to the West. We secured from the U. S. Departments of Agriculture and Commerce year-to-year figures on cotton production, acreage and yield, by states, which contradicted, instead of confirming, this generally-held impression. Using these government figures for his charts and tables, the author prepared, at our request, this revealing analysis . . . . . .

TABLE I—Average Annual Cotton Production in the United States by Selected Periods from 1900-1938

(Units Are Per Cent and Bales of 500 Pounds Each)

	EAST	WEST	TOTAL	
	%	%	%	Bales
1900-1909 (10 yrs.)	53.9	46.1	100	11,176,000
1910-1919 (10 yrs.)	53.1	46.9	100	12,870,000
1920-1929 (10 yrs.)	42.8	57.2	100	13,126,000
1930-1938 (9 yrs.)	44.3	55.7	100	13,404,000
Year 1937 only	44.3	55.7	100	18,945,000
Year 1938 only	43.7	56.3	100	11,943,000

CHART A

RELATIVE U. S. COTTON PRODUCTION

EAST VS. WEST

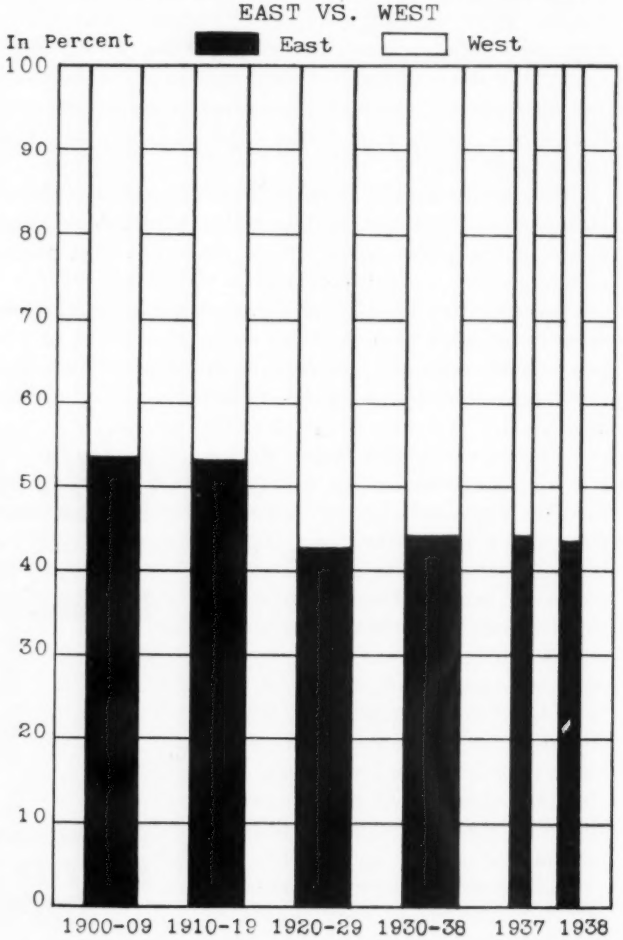


CHART B

RELATIVE U. S. COTTON ACREAGE HARVESTED
EAST vs. WEST

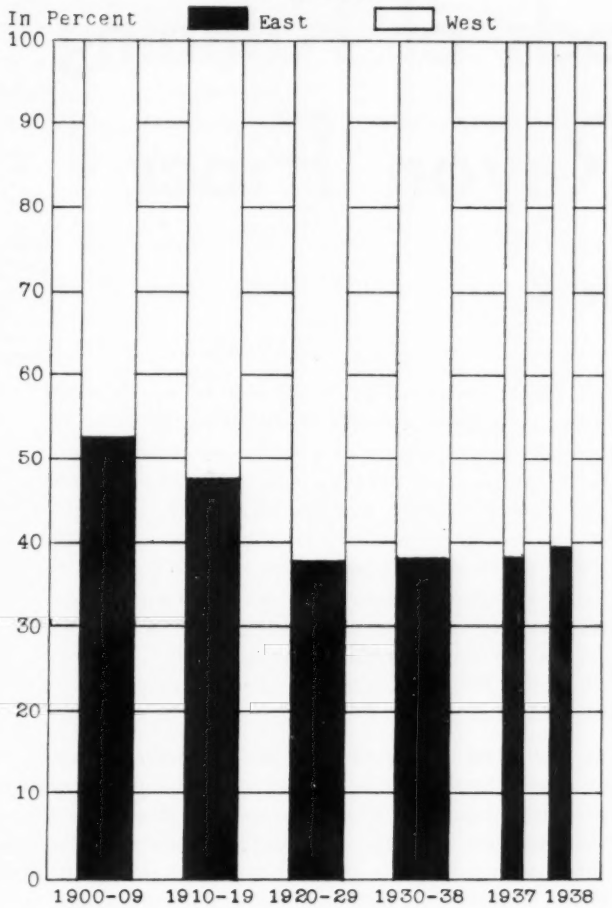


CHART C

U. S. COTTON YIELD PER ACRE
EAST vs. WEST

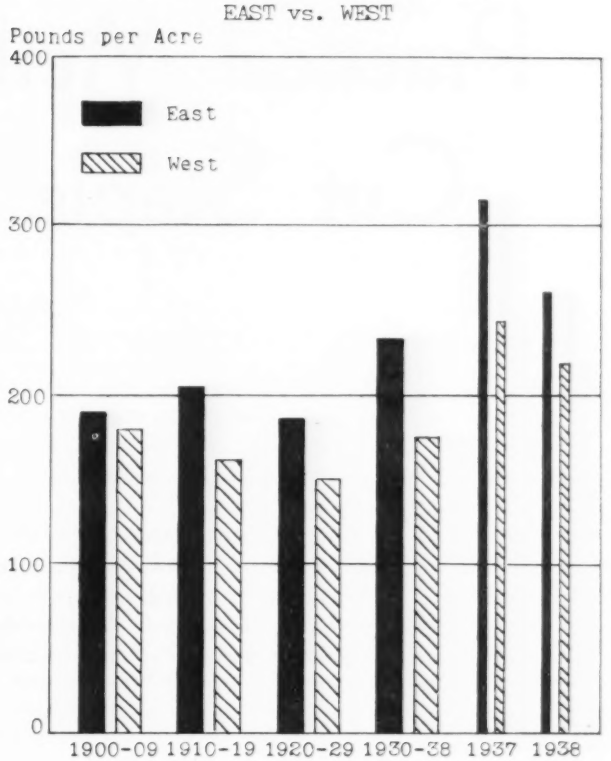


TABLE II—Average Annual Cotton Acreage Harvested in the United States by Selected Periods from 1900-1938

(Units Are Acres and Per Cent)

	EAST %	WEST %	TOTAL %	TOTAL Acres
1900-1909 (10 yrs.)	52.5	47.5	100	28,887,000
1910-1919 (10 yrs.)	47.4	52.6	100	33,301,000
1920-1929 (10 yrs.)	37.5	62.5	100	38,250,000
1930-1938 (9 yrs.)	37.6	62.4	100	32,047,000
Year 1937 only	37.8	62.2	100	33,623,000
Year 1938 only	39.4	60.6	100	24,248,000

TABLE III—U. S. Cotton Yield per Acre

(In Pounds per Acre)

	A East Lbs.	B West Lbs.	C Difference A — B Lbs.	D U. S. Average Lbs.
1900-1909 (10 yrs.)	190	180	10	185
1910-1919 (10 yrs.)	206	165	41	185
1920-1929 (10 yrs.)	187	150	37	164
1930-1938 (9 yrs.)	236	178	58	200
Year 1937 only	315	241	74	269
Year 1938 only	261	219	42	236

aged 236 pounds in the East and only 178 pounds in the West, the composite or weighted average of these two yields being about 200 pounds for the United States as a whole.

Moreover, the actual difference between the yield per acre, East versus West, has tended to widen over the period 1900 to 1938 (see Column C of Table III). Thus this difference in the decade 1900-1909 was only 10 pounds per acre, but by the nonade 1930-1938 this spread had widened to an average of 58 pounds per acre. Although the 1937 difference of 74 pounds is well above this average, and the 1938 figure of 42 pounds is below it, it is only by chance, of course, that the average of these two figures (74 and 42) is itself 58 pounds.

This substantial difference in yield as between the East and the West has been the result of many factors. Among these factors may be listed the following principal points: First, the "snapping and sledding" method of harvesting cotton, especially in the Texas area, tends to reduce the yield per acre. Second, the Eastern grower generally uses much more fertilizer per acre, as a rule, than does the Western grower. And third, there probably is a more intensive cultivation, together with smaller farms, in the East as compared with the West.

The primary point that the production of cotton in the East has held its own in recent years is of real interest. But the additional reasons for the maintenance of this position are thought to be of equal significance.

Practical Methods of Running Cut Staple Rayon Fiber

Article 2

• The first installment of this discussion by a practical mill man with experience on running rayon staple on cotton mill machinery appeared on page 63 of the August issue and dealt with the characteristics of the various types of rayon cut staple.

The accompanying installment covers the actual handling of this fiber on the machinery, up to and including the fly frames. Changes in this new fiber and its processing are so rapid that it must be borne in mind that the author is limiting his discussion to his own experience, based on his own conditions at his plant; he presumes in no way to be covering every possible method of treatment, submitting his remarks as the report of a rather extensive experience in adapting existing mill machinery (and not particularly modern equipment at that). Furthermore, it is limited in this installment to 1 1/2 denier, 1 9/16-inch viscose staple.

A subsequent installment will continue the discussion into spinning, warp preparation, and weaving of cut staple rayon yarns and cloth. You may need this information later. Save your issues . .

CUT RAYON STAPLES are usually delivered to the mill free from foreign matter, thus differing greatly from cotton; that is, the rayon staple stock never forms hard lumps or hard sheets as does cotton when subjected to pressure in bale form. When staple rayon bales are opened the stock gradually expands and forms as light and fluffy a bulk as is necessary for practical processing. For this reason, opening machinery ordinarily required for processing cotton is omitted; instead, as little preliminary processing as possible to get the stock into a uniform lap is desirable.

Rayon staple does not possess the clinging qualities of cotton, consequently, if the stock is loosened up too much it has a tendency to become too puffy, to split, and to fall apart. Whether the mill has one-process picking or the older type of separate processes, the stock should be brought directly to the picker room in bale form, opened up, and fed directly into the breaker hopper. The more compact the stock, the better the results will be toward a smooth lap. Where a mill has three-process picking, better results will be obtained by omitting the intermediate picker; the staple is less likely to be damaged and the cost of picking is reduced.

Several volumes could be written and numerous proofs offered as to specific claims for the proper beats per inch or pound for cotton, so far as different types of beater speeds are concerned. Every practical carder has his own opinion on this; however, when handling rayon staple it is necessary to have a medium feed, with as few beats per inch or pound as possible. Where a mill is constantly changing from cotton to rayon, or vice versa, it is not practical to alter speeds here and there in the picker room; instead, the motor pulley should be changed to alter the speeds of the entire machine proportionately. This is especially desirable where the mill has all three picking processes modernized into one continuous process machine with all three sections synchronized for feeds, deliveries, etc.

Points on Picker Room Methods

As a starter, it is wise to reduce the speed of the entire machine or machines by one-third, with the feeds adjusted to give two-thirds the beats per inch or pound that are ordinarily run with cotton. Of course this may prove impractical on some particular machines; trouble may be experienced with obtaining a lap that is ragged and uneven, due to altered fan speeds, etc. The main idea, however, is to determine by trial a simple method of adjusting the picker speeds for rayon and cotton. Perhaps it will prove necessary to alter the set-up for cotton slightly in order to simplify the change and secure the proper handling of rayon staple.

As a suggestion, in a mill running fairly fine counts on cotton with a fairly long staple, a good figure, with a blade beater at the breaker, would be about 25 beats per inch with a medium feed. With the same machine on rayon staple, however, the beats per inch should be reduced to about 18. At the finisher picker, 50 beats per inch with a carding or Kirschner beater is amply safe for cotton, but with rayon this should not exceed 35.

On a typical one-process machine, there would be three beaters: a 12-spike Buckley in the breaker section, 24-inch diameter; a 2-blade, 16-inch beater in the middle section; and a 3-blade carding or Kirschner beater, 16-inch diameter, in the finisher

section. The Buckley beater is desirable with some types of cotton, but is not necessary in handling rayon staples. But with speed adjustment and more open settings, it is not necessary to eliminate it. In Fig. 1 is given a comparison of suggested lay-outs on a one-process picker on cotton and on rayon staple.

FIG. 1

Picker Lay-Out for Cotton

Type Beater	Number Blades	R.P.M. Beater	Dia. Feed Roll	R.P.M. Feed Roll	Feed Roll Setting	Beats per Inch	Fan Speed
Buckley	12	670	3″	14	½″	6.09	950
Blade	2	1310	2″	26	¼″	16.05	1300
Carding	3	1200	3″	8	¼″	47.07	1175
						69.21	

Grid bar settings: ½-inch at top bar next to feed roll, and bars are tapered so the last bar under beater is full ¾-inch. The above set-up is for 1⅛-inch staple cotton. Weight of lap, 39.5 pounds; length of lap, 50 yards; 12 ounces per yard.

Picker Lay-Out for Staple Rayon

Type Beater	Number Blades	R.P.M. Beater	Dia. Feed Roll	R.P.M. Feed Roll	Feed Roll Setting	Beats per Inch	Fan Speed
Buckley	12	440	3″	14	¾″	4.00	630
Blade	2	865	2″	26	½″	10.59	860
Carding	3	790	3″	8	½″	31.06	775
						45.65	

It is not necessary to adjust or change the grid bar settings as the decrease in beater speeds automatically takes care of any possible damage to the staple due to less centrifugal force with lower speeds. Close grids or replace with sheet metal. Leave space across full length of beater for air. The above set-up is for 1½-denier, 1⅜-inch rayon viscose staple. Weight of lap, 39.5 pounds; length of lap, 50 yards; 12 ounces per yard. Time to make lap, 10 minutes. Beats per lap, 36″ × 50 × 45.65 = 82,170 beats. Beats per pound, 82,170 ÷ 39.75 = 2,067.

In operating a continuous one-process picker on cotton, about 1 to 2 per cent of laps made must be set back and re-processed due to being too light or too heavy. All modern mills attempt to hold the percentage of set-backs to less than 1 per cent of total laps run, due to the fact that the staple is injured with extra processing and, also, the cost of picking is increased.

In handling rayon stock on pickers it is a wise plan to check the machines thoroughly to see that the evener motions are sensitive enough, and feeds and deliveries balanced and working properly. Under no circumstances should any stock be re-processed because of a slight variation in the weight of laps. In running rayon in the carding processes it is necessary to use more doublings than is ordinarily used in handling cotton to secure an even yarn; consequently a slight deviation in the weight of laps is not a serious handicap, provided it is held down to a small percentage.

Handling Rayon on the Cards

Where a mill is manufacturing fine combed cotton yarns, all card speeds are slow enough to handle 1½-denier, 1 9/16-inch staple cut rayon. In a carded yarn mill, the licker-in speed should be changed from the usual range of 400 to 450 r.p.m.; on rayon this should be cut down to not in excess of 375 r.p.m., or even lower.

Due to the stock being free from impurities, it is possible to run a higher doffer speed on rayon than cotton. Where a speed of 6 or 7 r.p.m. is run for cotton, the doffer can be speeded to 8 r.p.m. or slightly higher. All other card speeds remain the same as for cotton.

In Fig. 2 we give comparative card settings for 1⅛-inch cotton and 1½-denier, 1 9/16-inch cut rayon. These settings, and the speeds just given, are based on a 50-grain sliver from a 12-ounce lap in both cases.

FIG. 2

	Cotton	Rayon
Doffer to cylinder	.007	.007
Flats to cylinder	.009	.011
Licker-in to cylinder	.007	.007
Feed plate to licker-in	.010	.017
Top mote knife to licker-in	.012	.012
Bottom mote knife to licker-in	.010	.010
Back plate to cylinder	.034	.034
Topping plate to cylinder	.029	Close as possible
Bottom plate at front	.034	.034
Under screen to cylinder-back	.022	.022
Under screen to cylinder-middle	.034	.034
Under screen to cylinder-front	3/16	3/16
Doffer comb to doffer	.022	.022

Where a longer staple is to be run, these settings would have to be altered or opened up proportionately to the increase of the length of staple. Also, similar changes would be made for the coarser denier stock.

In handling the coarser denier cut rayons, 3, 5, or coarser, difficulty will be encountered due to the laps splitting at the cards, causing ends to come down or making an uneven sliver. This condition can be overcome by running three strands of slubber roving through the calender rolls at the finisher picker section, one strand near each selvage and one strand in the middle of the lap. A simple wooden creel for the three bobbins of slubber roving can be built and fastened to the top of the picker over the calender rolls where it will be easy for the operator to handle, and also, with the proper distance between bobbins for the roving to be fed through the calender rolls and into the lap with proper spacing.

The coarser the denier of the stock, the less likely the stock will hold together, consequently some provision must be made at the cards to prevent the stock from falling underneath the machine, especially underneath the licker-in. This is usually accomplished by removing the mote knives from the card, and making a metal pan to go under the licker-in on top of the regular under-screen. Extreme care should be used in making this pan as it must be curved to conform perfectly to the regular under-screen and must be gauged with the regular circular gauge working from the licker-in bearings.

In running some particular mixtures such as flax and coarse denier rayon, difficulty is likely to be experienced with the web sagging between the doffer and trumpet. As in the case of the licker-in, a metal pan can be made to fit between the doffer and trumpet. The pan should be fastened across the card directly under the doffer comb, curving slightly downward, and curved up on the edges to a funnel shape tapering off directly in front of the trumpet.

Changes at the Drawing Frames

Where a mill does not have modern machinery, it is somewhat handicapped in handling cut rayon staple at the drawing process, especially if there are only enough drawing deliveries for just one process of drawing. The main key to manufacturing spun rayon satisfactorily is to make a very, very even yarn. A slight variation in the finished yarn numbers gives no serious trouble; however, a mill can make spun rayon yarn with the average numbers

right on standard day after day and yet have large and small places (wide extremes) in the yarn which will mean total disaster so far as weaving is concerned. A small amount of unevenness is not serious with cotton yarns as the cotton fiber is tough, pliable and has ample clinging qualities; cut rayon, on the other hand, has none of these properties. Where the finished rayon yarn is large in diameter, there is little twist inserted, the twist having taken effect mostly at the smaller diameters of the yarn, where there is likely to be a twist factor of 5.00 or 6.00, which will cause the yarn to be very brittle at these points. At the large diameters there is likely to be a twist factor of only 2.00 to 3.00, which will mean the yarn will pull apart very easily at these points.

Where only conventional drawing frames already in use are available, two processes of drawing are desirable and safer on cut staple rayon. The majority of the old-time carders know how to make an even roving, but sometimes we younger men are likely to be overly ambitious toward a low cost record, and in the case of spun rayon we can come dangerously close to being "penny wise and pound foolish". This is no argument against short cuts in handling cotton, as it has been the writer's privilege to see fine combed yarns, both warp and filling, run very successfully with one process of drawing; and the machines were of a very ancient vintage.

The only changes necessary to make on the drawing when changing from cotton to cut rayon is in the setting of the rolls. The generally accepted method is to have the first and second rolls set ⅛-inch over the length of staple, from bite to bite; increasing by 1/16-inch towards the back. Incidentally, a front roll speed of about 300 r.p.m. is generally accepted as correct for old-type drawing making a 55-grain sliver.

Before running cut rayon, a careful inspection should be made to see that the bottom steel rolls are in good shape as far as bosses and flutes are concerned. It is a very bad practice to increase the tension at the drawing to make ends stay up because of worn-out rolls. Either cork, leather or one of the proven synthetic roll coverings may be used for the top rolls—each providing some feature.

The Roving Process

As previously mentioned, practically all types of cut rayon staples are more difficult to draft than cotton, due to the great smoothness of the fibers and the poor clinging qualities of the stock within itself and to the drafting rolls. The proper amount of draft and twist are very important items on fly frames and spinning. It is desirable to run just as little twist in the roving as possible as the break draft fails to break down the twists if the twist factor is too high. On the other hand, it becomes necessary to remove roving from frames at times and store in bins for future orders and if the twist factor is too low the roving will puff, become tangled and fall apart if kept in stock any great length of time before using.

Thus we see that we are limited as regards twist on all fly frames, and, further, every type of rayon or different denier must be carefully watched at each process to see that we are getting an even roving. In some cases the roll weights must be increased over those used on cotton. Where this is not practical due to the lack of time or undue expense, it is a good idea to cut the twists in all rovings to the point where it begins to pull or fall apart in the creels. Of course, by running such low twists no roving can be stocked or laid away, but must be spun into yarn without delay.

While our experience has been extensive as to the amount of cut staple rayon yarn made, and as to the length of time over which we have run it, we have been circumscribed as to type of roving equipment to conventional three-roll frames. Control of the fibers that is provided by some of the newer developments in drafting is even more important on cut staple rayon, due to the peculiar characteristics of this fiber, than on cotton, if that is possible. More recent shifts to cut staple rayon have taken advantage of the availability of the newer drafting principles, some of which have been adapted specifically to cut staple rayon, but unfortunately these are at this time outside of the experience of the writer.

Our remarks, therefore, pertain solely to conventional roving frames. On this basis, a suggested layout for fly frames in regard to rovings and twists for 1⅛-inch cotton and 1 9/16-inch viscose cut rayon staple, 1½-denier, is given in Fig. 3.

FIG. 3

Hank Roving	Type Frame	Combed Cotton twist factor	1½ denier rayon twist factor
.66	Slubber	.80	.55
1.60	1st intermediate	1.00	.70
3.25	2nd intermediate	1.10	.90
7.50	Jack	1.75	1.25

In the case of a warp or filling yarn coarser than 8s, extra twist should be put in roving at the appropriate fly frame and the yarn either quilled or warped directly from the fly frame bobbin. This suggestion is made due to the fact that the average fine goods mill ordinarily running cotton does not have large package equipment necessary for handling coarse numbers and keeping the product free from excessive knots due to small rings, etc.

As a rule, with our equipment, we have found that yarns from 8s to 14s should be spun from 1.60 hank roving double; 15s to 30s from 3.25 hank roving double; and 32s and finer from 7.50 hank roving double.

We find in a recent discussion of staple rayon on cotton mill machinery, by a machinery expert* reports on what is being done with the use of the newer apron type special drafting arrangements recently perfected for spun rayon; which permit the use of all staple lengths from 1½ to 3 inches, and any desired mixture of staple lengths within this range. Such drafting arrangements provide a much wider range of drafting along with smoother control. Depending on the yarn number, we are told of single-process roving processes with these new drafting

(*) James L. Truslow, of Whitin Machine Works: "Staple Rayon Processing on Cotton Mill Machinery"; a paper presented before the American Association of Textile Technologists.

arrangements which produce from drawing sliver a roving that is taken directly to the spinning frame for making average numbers of yarns; and for the finer numbers, a 10x5 and an 8x4, for example, or a 10x5 and a 7x3½, are successfully used to produce roving for the spinning room. A much wider range and flexibility than is possible with conventional roll systems is obviously provided thereby.

(The final installment in this series, to appear in an early number, will continue the discussion covering spinning, warp preparation and weaving of yarns of cut staple rayon.—The Editors.)

Dyers and Chemists Enjoy Their Annual Outing and Golf on Lookout Mountain

A GOLF tournament, horseshoe pitching, sack races, bridge for the ladies, and other forms of entertainment—with no speeches—provided the program of the annual outing of the South Central Section of the American Association of Textile Chemists and Colorists, at Lookout Mountain Hotel, near Chattanooga, on August 4-5. Nestor Groteleuschen, of Magnet Mills, Clinton, Tenn., is chairman of the section; and W. S. McNab, of Quaker City Chemical Co., Knoxville, is secretary.

The affair was purely recreational. There was an attendance of more than 125 men and about 50 ladies, who participated in the games during Friday and Saturday; the outing being concluded with a banquet on Saturday evening, with Mr. Groteleuschen as master of ceremonies and Robert W. Philip, editor of COTTON, as toastmaster.

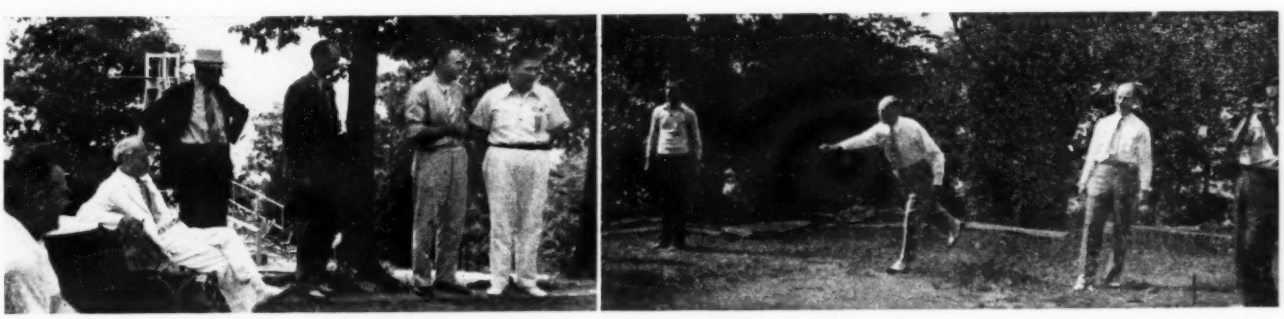
The golf tournament was conducted on a handicap basis. Prizes won were as follows.: T. A. Davis, of Muscogee Mfg. Co., Columbus, won low net among mill men; James Cassell was second; Jack Anderson, of Peerless Woolen Mills and Fletcher Kibler, of United Hosiery Mills, were tied for third place; and W. O. Goolsby, of Dixie Mercerizing Co., was fourth. Nestor Groteleuschen won low gross, with Sam Hennessee, of Standard-Coosa-Thatcher Co., Earl Rollinson, of Jefferson Woolen Mills, and W. T. Sledge, of Miller-Smith Hosiery Mills, second, third and fourth respectively.

A Doughty Golf Foursome. Left to right: Elihu Wayman, of Holliston Mills; Tom Printon, of National Oil Products Co.; Art Thompson, of Ciba Co., Inc.; and Max Y. Parker, of Holliston Mills.

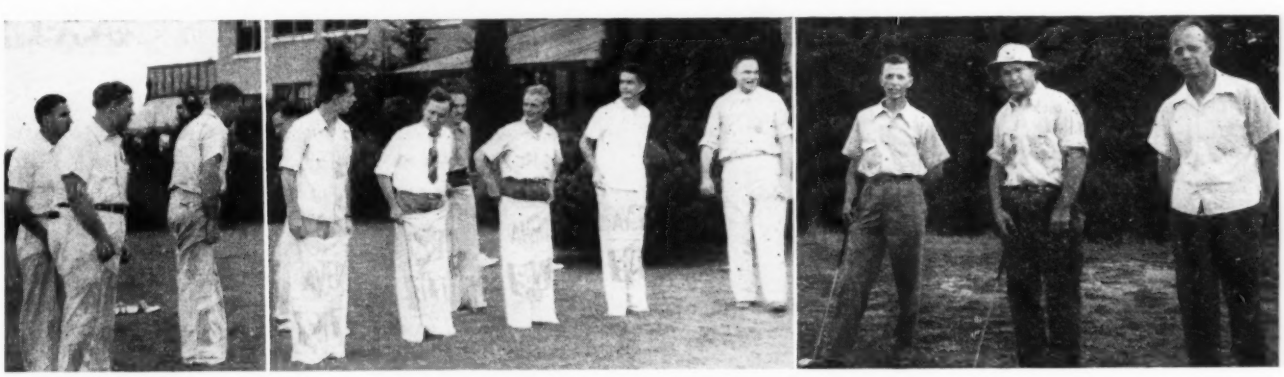
George Withers, of Ciba Co., Inc., was low net scorer among the salesmen, followed by W. R. Sargent, of Laurel Soap Mfg. Co., and Lee Baker, of Detergent Products Co. Danny Rion, of National Oil Products Co., won low gross for salesmen, followed by Cliff Myers, of Onyx Oil & Chemical Co., and Louis Kirby, of Calco Chemical Co. High score was made by McGee Calhoun, of Ware Shoals Mfg. Co. Special prizes were won by B. P. Barnes, of Dixie Mercerizing Co., and Bill Evans, of Harriman Hosiery Mills.

Mr. Groteleuschen and John W. Ross, of Atlanta, won in the sack race. W. R. Sargent, C. E. Rollins, G. M. Cooper, Murray Smith, and Ires Akers won in the horseshoe pitching contest.

There was an abundance of prizes, provided through contributions from supplying firms. These included a large number of prizes awarded to the ladies participating in the bridge tournament and other special contests under the direction of Mrs. W. S. McNab and Mrs. Fletcher Kibler.



Horseshoe Gallery and Pitchers. Left to right, in gallery, W. H. Randolph, Jr., of Staley; Turner Rolleson, Jefferson Woolen Mills; H. B. Rogers, of National Aniline & Chemical Co.; R. J. Little; Men's Chairman Homer Welchel; Charles Glass. Pitching: Lee Baker, of Detergent Products Co.; Jack L. McKee, of Carbic Color and Chemical Co.; Ires Akers; and Ed Landis.



Ready for the Sack Race: Left to right: T. J. Marler, Charles Glass, Henry Gaede, John Ross, Murray Smith, Nestor Groteleuschen, W. H. Jackson, Joe Oliver, and Homer Welchel. In the golf threesome: D. M. McSpadden, George Melvin Cooper and James Cook. (Photographs for "Cotton" by J. A. Crumley, of Hosiery Processing Company.)

Variation in Yarn

In which the author gives some very practical pointers on how to make the yarn even, from the opening room to spinning

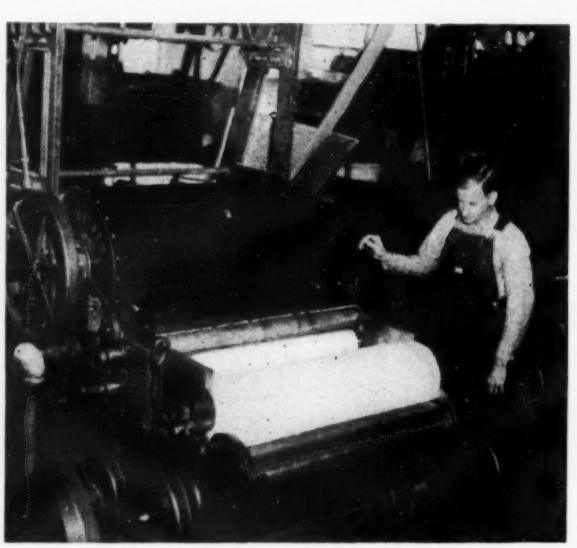
By Briggs Young

IN THE January 1938 issue of COTTON, Fay H. Martin, whom we mill men recognize as an authority on roving frames, was the author of an excellent article dealing with the story of uneven yarn. He did not go into the causes of variation in the yarn, but presented the facts so that we would have a basis upon which to work.

He showed on yarn of supposedly the same number that the number itself varied from 18.69s to 21.98s, and that the skein breakage of these yarns varied from 94 pounds to 114 pounds inclusive. A startling point was that the lighter number in certain instances broke within three pounds of the heavier number, and that while the graph curve of the yarn numbers was almost a straight line, the curve or graph of the average breaking strength resembled the course of the "roller-coaster" at our local amusement park.

Since those facts have been presented nearly a year and a half ago, we have tried to govern the variation in our yarn more closely, and to a great extent have been successful. Outlined here briefly are some of the factors that influence yarn variation and how uneven yarn may be alleviated. Instead of telling how to prevent yarn variation, we will go at it from the standpoint of making yarn without much variation.

To do this one must start at the cotton platform or warehouse where the bales are opened and fed into the opener room. Each bale must be as much like the next one as is practical. Different types of cotton react differently to the same treatment, so if mixed cotton is to be used, try to vary the proportions as little as possible from the average. If an inferior grade must be included, feed in as little as possible and feed it as consistently as conditions will allow. Even feeding tends to give even results.



In opening, watch the feeders to see that they run most of the time and feed a smaller amount. Too much speed can easily cause curling. See also that capacity is not exceeded. Keep motes and fly waste away from the grids and screens, as machines full of waste cannot clean properly. Clean out waste a little more often than is necessary. Check settings of beaters to feed rolls or to grid bars. Cotton will probably be a little more easily evened up on later processes.

Preventing Variation in the Picker Room

In the picker room the first real evening action takes place, so check and double-check operation of evener pedals, and cone belts. Loose evener belts, bent belt guides, or too wide evener belts can cause sluggish evener action. Supersensitive belt guides are now available for old-type evener motions. Hopper feeders will give a better blending if maintained about two-thirds or three-fourths full than when they are running over. Sharp and true beater blades will pull the cotton away in smaller pieces and allow better cleaning and evening than a dull rounded blade will. Settings are closer here so more accuracy is required and more care should be taken in making and checking them.

Blows per pound rather than blows per inch or beater speed may well be considered if proper cleaning and evening are to be obtained. Feeder sections should run more of the time and feed as light as will supply the demand. Fan speeds should be fast enough to lay the stock on the screens and remove dust but not fast enough to pile the cotton on the edges more than in the middle. Dampers will help to balance and regulate the pull from both sides of the top and bottom screens.

By all means have a lap weight indication and lap scale to maintain consistent laps from lap to lap and from picker to picker and see that it is used to adjust picker feed. Periodic check on yard-to-yard weight from even pickers will show variations that may very easily be checked before they are drafted into long lengths of "thick and thin" card sliver.

Feed the re-worked waste into new stock at a constant and uniform rate. Routine picker overhauling should be done about every four to six weeks, checking leather, aprons, feed lattices, calender rolls, feed rolls, beater bearings and settings.

On the cards keep up a close inspection to show any cards that are making a bad web or that are taking out too little or too much waste. Check tension between calender and coiler heads. Be sure trumpets are small enough to stop lumps or bad places. From time to time have operatives submit 10 sample piecings and see that they make small, even piecings on the drawing frame. Sliver rolled between oily palms will not draft evenly later on. Doff cans should be short rather than too full. Friction of coiler plate revolving on tightly packed sliver will stretch it and also cause mixing of coils in the can.

Although drawing is supposed to even up the sliver by doubling and drafting, it fails sadly in this capacity. Variation charts made from card sliver rarely show over 8 per cent to 10 per cent variation per yard while finished drawing charts almost always exceed 20 per cent average variation. However, the drawing does parallelize the fibers and straighten them so that succeeding processes may handle the fibers to better advantage.

The Drawing Rolls

Since for the finer yarns at least two processes of drawing must be included, it is important that serious consideration be given to the drawing in order to reduce this variation to a minimum. Probably the worst offender is roll settings. A sliver tester which will give readings as a percentage of variation is more accurate than visual observation. Set the rolls and then test until the least variation possible is obtained.

For most work, cork or leather top rolls produce less variation than steel. Buff the cork or change the leather top rolls before they make bad work rather than let bad work be an indication that they need changing. The front roll speed must be set with respect to the weight and type of stock being run, type of rolls, and condition of the machinery.

A thorough check should be made on the distribution of weighting and drafts over each pair of rolls. The tension between front roll and trumpet should be on the slack rather than the tight side. The correct trumpet for the grain sliver being run must be used and should be replaced when the hole gets too large. Stop motions must stop the frame before thin places or lap-ups are made. The sliver guide traverse should have no dwell at end of strokes.

Set the full can knock-off to stop the frame before the cans are packed too full. This is especially true on combed stock. The coiler plate might well run in the same direction as the can table to reduce this friction. Check oiling, cleaning, and condition of all draft gearing as backlash can put some very uneven places in the drawing. We have found that helical gears give more even power flow than straight gears. If a sliver traverse is provided, see that it does not run the sliver out too close to the ends of the top rolls to prevent trouble from this cause.

Preventing Variation on Roving Frames

Slubber roving should have enough twist to hold together in the intermediate creel without stretching, yet not so much as to interfere with subsequent drafting operations. A roving tester will help maintain this twist. A little more break draft will reduce the draft required between front and second rolls. Rectangular-shaped sliver trumpets help to thin out the fiber mass, allowing the rolls to get a better bite and control the loose fibers along the selvage.

Check the roll weighting. By this we mean to see which lever combination gives the best results, then see that each delivery has this test combination set up on it.

On fly frames some variation is introduced by the action of the cones. First start with bobbins as near the same size as practical. Many plants check their bobbins when first received, yet few bother to recheck them as they are in use. Bobbins react differently to wear. Some change shape, others change weight, some wear more on one side than the other. Have a set of gauges and tolerances, and if a bobbin exceeds these, discard it. The frame should be adjusted to maintain an even tension throughout the bobbin without racking or shifting of cone-belts. Since the tension and evenness depend on power transmitted through the cone belt, it is wise to watch the condition of the belt and belt guides, also the condition of flyer, presser, roving slot, and other surfaces over which the roving has to be pulled.

Intermediates and speeders require practically the same care as the slubber, except possibly to a greater degree. This is due to the fact that as the strand gets smaller the percentage of variation increases. Where frames are equipped with creels (not fed from cans) some variations may be introduced by broken roving steps, creels not set to same

height, binding roving sticks, and creels not lined properly so that top rolls do not line up with roving steps. If the bobbins are too full or too big for the creel they will rub together causing friction and uneven places in the roving or yarns.

The same care must be taken in the bobbin-building motions as mentioned in slubbers. That is, the bobbin must be built with as near the same tension throughout as is practical. This insures an even-density package and helps prevent stretched places.

Into the Spinning Room

If the spinning is *perfect* it will only produce such results as have been incorporated into the roving. As spinning is never perfect it naturally introduces some variations into the yarn. However, this can be held down to a minimum by checking the same points on the creel that were mentioned on roving frames. Check bottom roll settings and frequently re-check on top roll cap bars, which easily get moved. See that there is no dwell on the ends of the roving traverse and that each roving guide places the roving in the center of the roll without running any ends out to the edge of the roll. The rings must be replaced when worn or chipped. Travelers should be changed before they wear out and the correct number of traveler should be used.

Spindles should be plumbed and frames lined properly. Bottom rolls should be cleaned, inspected, and reset at regular intervals. Ball roll joints make irregular work. Yarn guides must be centered and set, separators burnished and set, especially the malleable type which bend easily. Lifting rods which stick cause badly built bobbins.

Check gear trains for back lash; helical gears give the smoothest power flow and are replacing straight gears in many frames. In most cases a little oil at regular intervals is better than a lot of oil now and then. Too much oil on top rolls creeps out into roll surface causing irregular drafting as well as making oily yarn.

Of greater importance than anything mentioned is that of laying out and operating a system of cleaning, oiling, inspecting, and repairing or replacing each unit of each machine so that each machine operates at its highest efficiency a greater part of the time. By this method many small items are corrected before they have time to cause costly breakdowns.

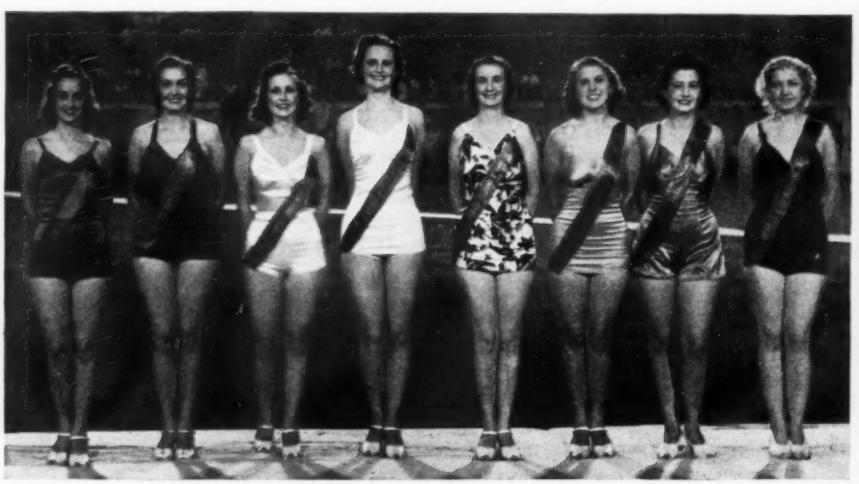
If the foregoing factors are given earnest attention, the variation in yarn will be reduced to a minimum. In any plant there are certain conditions, peculiar to that plant, which cause variation in yarn, so it is advisable to investigate and remedy these conditions first.

Textile Beauty Contest at Columbus

An outstanding example of public and industrial relations work was the participation in and encouragement of a textile beauty contest by the eight textile mills in Columbus, Ga., in July. This was the second of such contests, the first occurring in 1938.

Through a formal election procedure, with the employees of the plant voting, one girl was selected at each plant to represent that mill in the final contest; with the girls who received the second and third largest number of votes representing their mill in second and third place, respectively. This produced 24 contestants in the final contest, which was staged, under the auspices of the Chamber of Commerce, in the Memorial Football Stadium before a crowd of more than 10,000 people. Officers from nearby Fort Benning acted as judges.

Strict rules applied to the contest. Each mill was limited to an expenditure of $22.00 for the costume of each girl: $5 for bathing suit, $5 for shoes, and $12 for dress. It was required that dresses be of cotton and purchased in Columbus. Only bonafide employees of the textile mills (office workers excluded) were eligible. Miss Eloise Saxon, representing Eagle & Phenix Mills, won first prize and was named 1939 textile beauty queen of Columbus. Miss Myra Kernodle, of Muscogee Mfg. Co., won second prize, and Miss Agnes Watford, representing the Bradley Mfg. Co., won third place. Loving cups were awarded the winners of the grand prizes, with more than 500 prizes, contributed by Columbus merchants, going to other participants. Last year, as well as this year, prize winners were employees of three different mills.



Left: the first-prize winners from eight Columbus textile mills in annual textile beauty contest. Right: the three grand prize winners (Miss Eloise Saxon in center).

THE JACQUARD LOOM

By James A. Ward

(Article 4)

(The article takes up here where it left off in August, with a discussion of various defects and faulty work on the Jacquard.)

THIS is the fourth and concluding article in a series taking up the various parts of the Jacquard, their operation, settings, and how defects may be corrected. The other installments appeared in June, July, and August . . . . . .

OUR NEXT PROBLEM-STUDY, worn needle-cranks, is a somewhat larger one. With the needle-crank worn the needles lose full control of the hooks, resulting in some hooks returning to their original position in time to go with the knives, while others return too late, missing the knives and leaving a fine skip in the cloth. It may be only one pick occasionally, but since it can be eliminated, why should it be allowed to continue?

Worn Needle-Cranks

Three suggestions are given here for meeting this problem. 1. The cylinder may be pressing the hooks too far away from the knives, taking them too long to return in the worn state of the needle-cranks. Already a rule has been given as to how far the cylinder should push the needles. When the cylinder has travelled in all the way, it should be possible by taking hold of it with one hand to rock it gently. If it is so that it can't be rocked lightly with the one hand, then it is travelling in too far, and unnecessary force is being used. The shorter distance the hooks are pushed away from the knives, the quicker they will return.

2. It also follows that if the knives before returning can be kept just a little longer time below the heads of the hooks, the same purpose will be achieved. This may be done by lengthening the lifting poles slightly, not sufficient to make them buckle, or drive the knives down with unnecessary force. The longer poles will give the knives more time where it is most needed—below the heads of the hooks. Failing this, the distance between the top of the knives, when they have descended to their lowest point, and the hook heads could be increased. This might be done by lowering the two plunger-rods which carry each set of knives. These should have a screwed top by means of which this can be achieved. Or it may be accomplished by shortening the "pump-rods". These generally have an adjustable screw. As a last resort, the hook-plate could be raised by the insertion of a piece of leather underneath each corner. The objective in all this is to have the hooks return to the knives immediately the top of the knife has passed the heads, and not as they generally do, near the bottom of the knife. When this has been achieved, nothing more is necessary. To test this, the loom should be turned slowly by hand, while someone at the Jacquard checks the point at which the hooks return.

3. The needle-holes in the card cylinder are sometimes bored too shallow, a fault one would hardly expect to find. It is well to compare the depth of the holes in the cylinder with the length the needles protrude beyond the plate. Or, when the cylinder has pressed the needles back all the way, to notice if any needles are buckling, or if it is impossible to move any of them horizontally with the fingers. If these two conditions obtain, either the holes are too shallow, or, the cylinder is being forced in too far, resulting in some hooks missing the knives occasionally.

When the needle point becomes slightly bent in a needle-plate which is not much worn, the needle will bind in the plate; it can also be sufficiently bent in a worn needle-plate to make the point of the needle miss the hole in the pattern-card; or, it may be bent in such a manner as to catch the top of the needle hole in the card and lift the card completely off the cylinder pegs, throwing the cards in a double-cylinder machine out of their consecutive order. When this occurs there is a burr on the point of the needle which requires to be filed off. No matter how the points of the needles become bent, the cause is the card-cylinder. The primary cause may be the weaver, who after drawing-in a warp thread has developed the habit of pushing the lay back before restarting; this sends a corner of the cylinder into the needles. Or, it may be caused by something more common—the loom banging-off.

As already stated, the card-cylinder should be at least one-half inch clear of the needle points before any turning action takes place. But there are times when it may require nearly an inch, i.e., with old pattern-cards that are buckled between the lacings in order to prevent the buckled cards from catching on the needles. And it should continue to travel a short distance after it has turned, so as to overcome

vibration and lost motion due to worn parts. If the cylinder is driven by a goose or swan-neck, it may be necessary to increase the size of the sheds in order to attain this.

The card-cylinder of the Jacquard is a focal point, and a great amount of the work is centered here. The need for good work is reflected in the life of the Jacquard itself. Its depreciation of 20 per cent is greater than any other machine in the weaving mill, its nearest competitor being the high speed loom with a depreciation of only 6 per cent annually. As previously pointed out, the card-cylinder must be ⅛-inch wider than the pattern cards. If the pattern card measures 3⅜-inches wide, each cylinder square must be not less than 3½ inches.

Cylinders and Cards

A Jacquard with cylinders and cards the same width, unless the cards are new, is sure to be a source of trouble. And new cards under such circumstances will destroy the peg holes in a very short time. A new set of pattern cards in order to pay for themselves ought to weave at least 20,000 yards. When a new set of cards is put into use, on a Jacquard, in the absence of the spring cylinder-peg already referred to, the thinnest pegs available should be used, and when these are tightened the card on each square should lift freely off the pegs. If this is done, there is not the slightest danger of the cards lapping around the cylinder, as often is the case. The thicker and newer pegs should be used when the peg holes in the cards become worn. The rather extensive use of gummed patches in many weave rooms to repair the peg holes in the cards indicates the need for vigilance here. Again, when the corners get worn off the cylinder, the size is of course reduced, and with worn corners and worn cards it is an exceedingly difficult matter to get results. Such cylinders (if no facilities are available at the plant) should be returned to the machine makers for new corners.

There should be in the supply room at least a couple of new or repaired cylinders to meet such a need. As a temporary expedient, it is possible to tack a strip of card paper over the corners where it will come underneath the lacing tape. But any old way won't do. All the corners must be fixed alike if each square of the cylinder is to present its card to the needles at the same level. It can be seen from these facts that the small cylinder allows the lacing-tape to idle, and the cylinder pegs to do all the work of drawing the cards to the cylinder at the expense of the peg holes in the pattern cards. Through a part becoming worn or loose, or when a cylinder hammer is renewed, it is quite an easy matter to let the cylinder get off square. To check this, place one leg of a small thin try-square against the needle-plate between the rows of needles, and bring the other down on the top square of the cylinder, and each square in turn.

When the card cylinder drops from its level so that the needles miss the holes in the pattern-card, the usual method used to find how far it has dropped is to smear the fingers with red lead or black grease, daub this on the points of the needles and weave a few picks; the marks made on the cards by the needle points will show the new level. This method is quite effective except in the case of worn cards. A good method of adjusting the cylinder to worn cards is to turn the loom until the cylinder is almost against the face of the needles. In this position by looking along the rows of needles from either end of the needle-plate the exact height can be seen. And as already mentioned, the cylinder has a tendency to move upwards when it strikes the needles, in which case the cylinder should be adjusted so that the needles strike near the top of the needle-hole. Any adjustment of the card cylinder needs to be carefully executed. Before moving the cylinder in any way it is a good plan to make a score mark on the cylinder hammer with a sharp tool or the point of a penknife, at the top just where it emerges from the bracket. This will show exactly how much the cylinder has been raised, or serve as a guide in case of accident.

Another good plan is to count the number of squares the head of the adjusting screw has been turned. It is very seldom a whole lot is needed, often one or perhaps two squares of the screw head is quite sufficient.

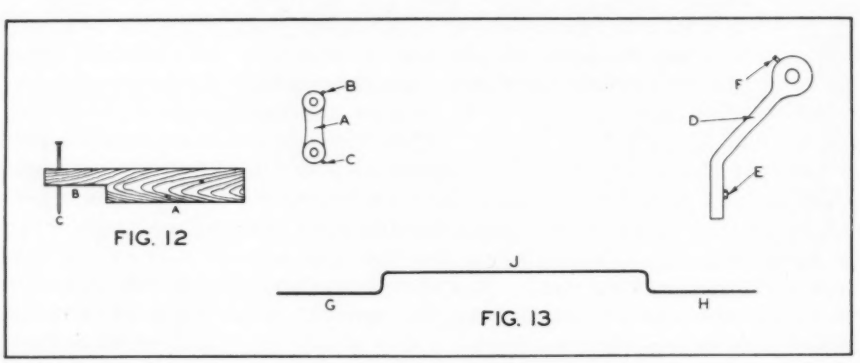


FIG. 12 FIG. 13

The metal end of the cylinder which extends underneath the hammer, and by which the cylinder is controlled and kept square to the needles should never be allowed to run loose, and when one does come loose, it must be tightened square to the cylinder. Fig. 12 shows a useful little gadget which can be made in a few minutes, and should always be kept on hand. Only a straight piece of wood some two inches square, by about 12 inches long, and a nail are required.

To use this little gadget, place the side A on the cylinder square, the part B is cut away to permit free movement over the cylinder pegs, the nail C can be adjusted so that the point will reach the metal corners. To be perfectly square the nail point must touch all four corners of the metal end equally. When the cylinder gudgeon has been tightened after coming loose, it should be tested similarly from each

cylinder square to find if it is true.

Relating Loom to Jacquard

One more point both of interest and importance remains, the point where loom and Jacquard meet, where the shedding of the Jacquard is combined with the picking and beating-up of the loom. While the time at which the sheds should open and close has been fully explained, one more point remains—the height of the permanent bottom line of warp above the shuttle race of the loom. By this line is meant the lower body of warp that remains when the shed is fully open. This permanent line of warp if too low, i.e., if it is allowed (and this word has the force of carelessness) to rest upon the shuttle race, it will in a short time wear tracks in the wooden race, with the result that when a warp end having a knot or lump gets into one of these tracks it is broken. On the other hand, if too high above the shuttle race it will cause the shuttle to turn on its side in its passage from one shuttle box to another. Of course, there are other things that will turn the shuttle such as too much power, or a large hole in the picker. The position of the warp to the lay in Jacquard work differs from plain goods. In all Jacquard work this permanent line of warp should be as near as possible to the shuttle race without touching. While in a cam loom making prints or sheeting, if the back warp shed is adjusted to rub on the shuttle race slightly, and the front shed is kept a little above, it will serve to distribute the warp threads more evenly and give a more closely woven and easier finished cloth.

When the shuttle is leaving the shuttle box, it should be tilted by the picker upward and outwards. This will guide the point of the shuttle as it leaves the shuttle box in towards the reed, and down towards the shuttle race. Before boring a hole in the picker for the shuttle tip, place both shuttle and picker on a flat surface and score a line across the face of the picker with the shuttle tip. The hole should be bored above this line and sufficiently to the front to insure the back end of the shuttle being raised upwards and pushed outwards. Or, the picker could be slipped over the picker stick and the shuttle pushed into the box up against the picker. The hole should be made above and to the front of this mark. In addition this will serve to prevent the shuttle in its passage from rising and hitting the warp threads above.

As already pointed out, an early timing of the shedding mechanism may break out warp threads in the selvages, but more often than not, when the warp threads keep breaking in the selvages it is the fault of the side temples. These should be as close to the reed as it is possible to get them, without letting them touch. Their chief purpose is to hold the cloth as near as possible to the reed width while the loom is beating-up the filling and to maintain that width while the temples have control. All side temples don't do this, as some temple manufacturers for some reason fill the pins in all temple rollers alike, i.e., the rollers are filled as they should be for one temple, but used for both, they are right for one temple but wrong for the other. The result of this is felt more in heavy or medium goods than in light goods. The warp threads will be found breaking in one selvage, but not in the other. This can be tested by opening a pair of side temples and turning the rollers in a forward direction, the pins should spiral outwards in both temples. Most likely it will be found that the pins in the rollers are filled to spiral outwards in one temple and inwards in the other. The temple in which the pins in both rollers spiral inwards is the one that will give the trouble. But why not visit the supply room and test a new pair. If these are as described, the attention of the overseer should be called to the fact that the matter might be rectified and the selvage trouble ended.

One more trouble that is met with, even if the permanent line of warp is lowered to the shuttle race, is the shuttle going underneath the warp. This happens only in a heavy pattern where for a large part of the figure, more warp is lifted than depressed, and particularly when there are bars in the pattern. Keeping the warp line unusually low will not always overcome this difficulty. In Fig. 13 a simple method is shown by which this difficulty may be completely overcome and at the same time keep the warp line at its proper level.

In Fig. 13 the part J of the small cranked rod fits between the side temples and rests on the cloth. The ends G and H are supported by the parts A, one fastened close to and outside of each temple, on the same rod. To adjust the cranked rod, push down on J to the required level, and tighten the screws B and C. The part A may be of iron or metal. The cranked rod for small looms need only be one-half inch thick, and for wide looms three-quarters to one inch thick. The part D is for wide looms and should be made of iron. It is fastened to the front rail of the loom, close to the selvages by the bolt E, and the cranked rod is kept fast by the screw F.

A similar part may be made for small looms in cases where the side temples are carried on a flat instead of a round rod. If a few of these parts are kept on hand there need be no worry about the shuttle going underneath the warp at any time.

Screw Driver

Because a screw driver is one of the most commonly used tools, and because its use is something every one thinks he understands, it takes part in many accidents sometimes resulting in serious infections, ruptures, strains, and even loss of eyesight.

Most every one uses a screw driver at some time or another, so it pays to know the safe ways. Here are some of them:

1. Never use screw drivers that have split, or splintery handles.
2. Always use the right size screw driver to fit the screw.
3. Use an awl, auger, drill, boring bit, or driven nail to start each screw. Otherwise, you'll have to guide it with your fingers in a dangerous position. On rough work it is often permissible to drive the screw part way with a hammer.
4. If the point is badly worn, bent or broken, put it in good shape before you use it. This can be done easily with a good file or a grinding wheel.
5. Be particularly careful to brace yourself well before attempting to drive screws from a position on a ladder.
6. Avoid using a screw driver as a substitute for a punch, chisel, nail puller, etc.
7. For electrical work use only screw drivers that have insulated handles.
9. When turning down screws, remember that a snug fit is better than an overtight fit, and there is less danger of the screw driver slipping.

—*National Safety Council*

Safety—if You Want It

(Continued from page 49.)

that stick out like quills on a porcupine will shred a hand or finger that comes in contact with same.

A crank is provided for turning card flats around to the setting points. Under no circumstances should the employee run the card to get the flats to the setting point. If an employee is too lazy to crank these flats around and sets them with the card running, he should be discharged for his own protection. "It is better to lose a job than to lose a hand."

Also in the setting of the flats, one flat is removed, this leaves the cylinder exposed. The superintendent, overseer, or second hand may come by and see the card running, and may test to see if the flats are adjusted, touch the cylinder, and lose a hand.

Drawing frames in the carding department should be equipped so that they can't be started while someone is working on them. A simple way of doing this is to make a sheet metal hook, four inches wide, to fit over the belt shifter rod so that belt cannot be shifted to operating pulley until this hook is removed. Attach hook to drawing frame with a chain.

We have thought of many hazards in the opening, picking and carding departments—and yet these departments can be operated without accidents. The Columbus (Ga.) Manufacturing Company's carding department has operated for 64 months without a lost time accident—and that record is still unbroken. They have not had an accident since October 10, 1934, and have worked about 1,970,877 man hours up to January 1, 1938. This mill, as a whole, has operated 4,107,930 man hours without a lost time accident—but the record was broken recently.

Do you ask how they did it? Well, the management is intensely interested in safety and that includes D. A. Turner, president; Forbes Bradley, vice-president and general manager; Henry Robinson, superintendent; and each overseer. They have done a splendid job of training their employees in safe thinking and safe habits of working.

The employees have had a large part in the making of this safety record. Probably the thing that started them to thinking about accident prevention was the first aid course the American Red Cross put on at the mill. About 50 employees took this course, and after an employee has taken the course he is more conscious of hazards and things that cause accidents, and he is going to try and prevent them. But he will do more than that. He will be a safety enthusiast and will spread knowledge of safety to his fellow employees. You can mark this down in big letters that every employee you get to take the American Red Cross first aid course will be another safety enthusiast in your plant.

Furthermore, the American Red Cross will gladly provide a teacher for the course in your plant free of charge. I firmly believe that teaching first aid to employees is the best thing a plant can do to get the employees interested.

The second reason for the success of safety at the Columbus Manufacturing Company was the reorganization of the safety committee to include not only overseers, but second hands and operators. This committee rotates every six months or year and some new members come on to take the place of the old members whose time on the safety committee has ended. Thus, they are able to teach more employees on this type of committee than they could on the permanent committee.

The third reason for the success of the safety program at the Columbus Manufacturing Company was this. When the safety committees were reorganized, the new organization was given the authority to discharge an employee responsible for an accident because of gross carelessness. This was written into the charter of the safety committee and copies of this charter were placed on the wall of each room in the mill. The first person discharged did not get hurt himself, but he started a frame while another employee was working on same. If he had looked to see if anyone was working on the machine he would have seen the other employee. The first time he did this he was given a warning. But when he did the same thing again, he was discharged, for the protection of the other employees.

This discharge rule was changed to the following after it had been in force for about three years. The first accident that a man has which involves the service of a doctor, he is required to report to the superintendent. The superintendent, in turn, talks to the man about the accident and shows him the dangers, etc., and if the case is of such a nature that the superintendent feels that the safety committee should vote on same, he reports same back to the safety committee and they vote. The following penalties are used: First time—warning; second time—lay off for one day to two weeks; third time—discharge.

When an employee has had a second or third accident, which is very rare, the safety committee takes up the case and investigates the accident to determine the cause and then votes as described previously.

When employees know that you are going to enforce safety rules in the same way that you enforce operating rules, they will follow them. If you lay off an employee because of disobedience to safety instructions and keep it a secret, then you lose the psychological effect that it will have on the other employees, which is most important.

To summarize the Columbus Manufacturing Company's safety record: First, management's interest; second, employees taking Red Cross first aid course; third, a general safety committee which rotates and which includes operators; fourth, enforcement of safety rules; fifth, a thorough investigation of each accident.

Accidents are caused and the causes can be eliminated by guarding machinery and educating the employees in safe habits. Management can have a good safety record if it is willing to pay the price of money and of time in training their employees. The price of safety is less than the cost of accidents!

MODERN METHODS OF DYEING

By Edward W. Pierce*

Article 8—Vat Dyes

THIS final installment deals with the widely used and popular **vat dyes,** discussing some of the more fundamental points in their application and use. The footnote below lists the subjects discussed in preceding sections, copies of which are available upon request so long as the supply lasts.

It is obvious that Dr. Pierce has given in this series an unusual kind of discussion of the major textile dyestuffs, in a manner not previously available. Comments from interested readers as to the desirability of having the entire series available late in convenient booklet form will be appreciated . .

AS THERE may be some misunderstanding regarding the true nature and qualities of vat dyes in general, it will be in order to clear up any wrong impressions at the beginning, so we may know the good qualities and where we may expect to find them, and also know the limitations and realize that all vat dyes are not of the same uniform degree of excellence.

The name "vat" has been a source of inquiry, on the part of general consumers, because it means little to them. Its origin is due to the fact that indigo was always dyed in an indigo vat, which, in the true sense of the word, is a round or square tank to hold liquids, but as the dyebath of indigo was prepared by the addition of substances which reduced the blue indigo to a yellowish liquid, the contents of the vat or tank became known as the indigo vat, and so the name of the chemical operation was taken from the vessel in which it took place. Along this same line, a "vat dye" is a dye which has to be used in a manner similar to indigo, by being reduced chemically to a soluble substance having a different color from the original dye, but which when dyed will then reproduce the original color.

Vat dyes originate from three classes of raw materials, or rather intermediates, viz., indigo, anthraquinone and carbazol. As with other classes of dyestuffs, not all dyes from the same source are of equal value or have the same properties, yet the retailer, selling goods to the consumer, advertises that the materials are dyed with vat dyes, which is supposed to confer a prestige on the fabrics, regardless of which vat dyes were used or how well they were dyed or printed. For practical purposes we must forget the actual origin of any particular dyestuff and make our tests to determine whether it is suitable for the class of material on which it is to be used, whether the shade is suitable to produce the effect desired, and whether it has the necessary degree of fastness to the various conditions it must encounter in course of manufacture and subsequent use.

We may obtain a number of vat dyes of moderate brilliance, which will stand the maximum exposure to sunlight, not as long as minerals to be sure, but as long as any organic coloring matter known to man. These same dyes will also stand a long boiling with soap, without bleeding their color in the slightest degree and will also resist the destructive effect of the bleaching lime, used so indiscriminately by laundries. They will not rub off or crock, will not sublime and tint other fabrics during storage; they will hold their shade and brightness under almost all conditions, until the fabric is worn out. It is on the strength of such vat dyes that a reputation has been made, which may sometimes be used to exploit others of lesser merit. It is regrettable that there are so few of these exceptional vat dyes; it is true that there is a range sufficient for a great diversity of shades, but when we require some special brilliant effect in blues or reds, we are forced to sacrifice some of the fastness qualities and use vat dyes that will make the shade that is demanded. For this reason there should be a close cooperation between the designers and the dyers and chemists, so the dyehouse will not have to turn out shades that may later be condemned by some testing laboratory.

There is quite a selection of brilliant shades among the vat dyes, but the fastness-to-light often falls below that of the very best of the direct dyeing cotton colors; the fastness to washing will be found to be quite satisfactory for domestic purposes, but will not withstand the drastic bleaching methods used by the average laundry, nor will the dyeings be given a high rating by the testing laboratories. All of this will serve to emphasize that it is possible to hunt out and classify the vat dyes and then use the very best the shade will permit. The selection will be further limited by the dyeing operation adapted for the goods in question; this will depend on the type of machine used and the ability of certain dyes to work well under the prevailing conditions.

Regardless of the class or shade, vat dyes have many properties in common. They must be reduced to

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*Technician, Ciba Co., Inc.

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(This series comprises abstracts of lectures delivered for several consecutive years to students in the art of dyeing, revised to adapt them to the general textile reader. The first installment, on page 48 of the December 1938 issue of COTTON, began the series with a discussion of colors and a development of the color sense. The second article, on page 48 of the January issue, described the various types of textile fibers and their dyeing characteristics, and outlined the general types of equipment for dyeing loose fibers, yarns and piece goods. The third article, on page 92 of the February issue, covered the basic dyestuffs, the fourth, page 65, March issue, discussed the direct colors, the fifth, page 101, April issue, covered acid dyes and their applications, the sixth, page 83, May issue, treated acid dyes containing metals and chrome mordant dyes; and the seventh, page 65, July issue, dealt with sulphur colors. The accompanying discussion of vat dyes concludes the series.)

the leuco condition by a suitable reducing agent and put into solution by means of a suitable alkali. In dyeing, while glucose might reduce the color, custom has decided that hydrosulphite, concentrated powder, is the most convenient and economical reducing agent. In printing we must use the sulphoxylate-formaldehyde compound, because it exerts its reducing action only when it is decomposed by the steam of the ager. In dyeing, the most suitable alkali is caustic soda, while in printing we use carbonate of potash. These are subject to changes, according to conditions; for instance, when we are dyeing wool with vat dyes we must replace the caustic soda with ammonia, in order not to tender the wool.

The sample cards illustrating vat dyes usually provide a chart giving the proper proportions of caustic and hydrosulphite, temperature of reduction, temperature of dyebath and whether or not salt should be added. These instructions seem formidable at first and have made many dyers quite nervous, but in fact they are very simple if we understand the reason for each caution. Naturally there is a definite temperature at which a vat dye will reduce most readily, this may be around 120-140 degrees F. for most of the anthraquinone vat dyes and around 170-180 degrees F. for the derivatives of indigo. There must always be sufficient hydrosulphite present to reduce the dyestuff and keep it in reduction for the duration of the dyeing process and sufficient caustic soda to put the dye in solution and keep it there. Since the oxidation of the hydrosulphite gives rise to sulphurous acid, which neutralizes and uses up the caustic, the amount of caustic is mostly dependent on the amount of hydrosulphite used; these figures run nearly pound for pound and when equal amounts are used, the end of the oxidation will have neither an excess of caustic nor of hydrosulphite. With some vat dyes a further excess of caustic is recommended, particularly with the ones which dye at 140 degrees F. and require no salt.

When a vat dye is in course of dyeing, the bath should be watched, for when the color begins to turn again to the shade of the oxidized color, it is a sign that the hydrosulphite is being used up, and if it becomes cloudy and turbid, it is a sign that the caustic is deficient. In such cases immediate additions should be made to restore the reduction and solubility of the bath, but if the dyeing temperature is low and the reducing temperature is high, there may be danger that the dye which has oxidized will not again go into solution and may cause a deposit on the material, which will later rub off. When the instructions state that a certain amount of water must be used for the reduction of a given quantity of dye, this must be taken seriously, for many troubles can arise from not having the reduced dye in a perfect state of reduction and solution before beginning work.

Today there are additions that may be added to vat dyebaths, which will promote leveling, slow dyeing and penetration and may even be used to strip a lot which has been dyed unevenly or too dark.

The temperatures usually given in the cards refer to cotton dyeing and it will be found that they are generally too high for work on rayons. Viscose rayon will usually take up any vat dye quite well at 75 degrees F. but if the shade is heavy, the temperature can be raised later by degrees until a very good exhaust takes place, far below the heat required for cotton. After the shade has been matched, the dyed goods should be given a good air oxidation before rinsing. Sometimes this is accomplished by a simple removal of the dye liquor and exposure of the material to the air, while many dyers prefer to extract the goods immediately after dyeing, which removes the surplus of dye liquor and forces a current of air through the lot, to oxidize the dyestuff. After the air oxidation, the color may be sufficiently oxidized and developed to go immediately into the soap bath, but some prefer to supplement the air oxidation with a chemical oxidation with sodium perborate and acetic acid, at 100 degrees F. All vat dyes should be soaped at a full boil for ½-hour as a final operation; this soaping does more than clean and oxidize the print, it has a very beneficial effect on the fastness, besides brightening the shade, and should neither be omitted nor slighted.

Jig and Pad Dyeing Vats

Vat dyes are applied to cotton goods by two methods, jig dyeing and padding, while padding is also divided into two classes, reduced padding and pigment padding. The main points to be remembered in jig dyeing are that the exposure to air is quite a factor in using up the hydrosulphite and caustic, hence the color in the box should be watched carefully and, as a precaution, some extra additions of equal parts of both caustic and hydro made at frequent intervals. The roll of cloth on the beams should not be allowed to stand still for more than a moment, or the color solution will settle to the bottom of the roll and cause bar effects on the finished goods. When a stop has to be made, it is a good idea to tie a rope on the end of the end-cloth and let it run through, then unfasten it and allow the roll to revolve or swing until ready to run it again in the liquor. Every time a sample is cut, it should be air oxidized, rinsed, oxidized in perborate of soda and acetic acid and boiled in soap, before drying it to compare with the sample to be matched. When the shade is right, the liquor is run off and the goods given two ends through the dry jig, then two through perborate and acid or bichromate and acid; then rinse and soap well at a boil.

Reduced padding is limited to the lighter shades, because it depends on how much dye can be kept in solution in the color box. We may reckon that the goods retain their own weight of liquor when they come through the nips of the padder, hence 100 pounds of goods will retain 100 pounds or 12½ gallons, so the amount of dyestuff that can be kept in good solution in 12½ gallons of liquor will be the amount we may expect to be able to put on 100 pounds of goods. When the padded material leaves the nips, it may be skied for 25 yards and then re-reduced, then skied again, rinsed, oxidized and soaped, or it may be taken direct from the nips and cuttled into a box, allowed to oxidize in the air for 20 minutes, batched on a roll again and finished on a jig, or rinsed and soaped in a dolly washer.

(Continued on page 105.)

New Spinning Frames at Dallas Embody Many Modern Features

By Robert W. Philip

(Photographs used in this article were made exclusively for "Cotton" by S. W. Judd, of Huntsville, Ala.)

A SUBSTANTIAL installation of new spinning frames currently being placed in operation at The Dallas Manufacturing Company, Huntsville, Ala., as a part of a continuing modernization program, provides a vehicle for describing a number of improvements and advanced ideas in cotton spinning. These new frames embody a number of new features—at least one being unique for so substantial an installation on this continent; together, they combine to make up the modern spinning frame which this article is intended to describe.

These new frames comprise only a portion of the mill's warp spinning equipment, and to describe the changes adequately a picture of the spinning equipment previously used is in order. Prior to the modernization, the Dallas spinning consisted of 296 frames, 160 of which were warp and 136 on filling. Of these, 128 frames—64 warp and 64 filling—were junked in the current modernization program. These were Saco-Water Power frames, installed in 1893. The warp frames were 208-spindle, 2¾-inch gauge, 1 11/16-inch ring (6-inch traverse), making a package with 1.92 ounces of yarn (net) per bobbin. The filling frames were 192-spindle, 2¾-inch gauge, 1 7/16-inch ring.

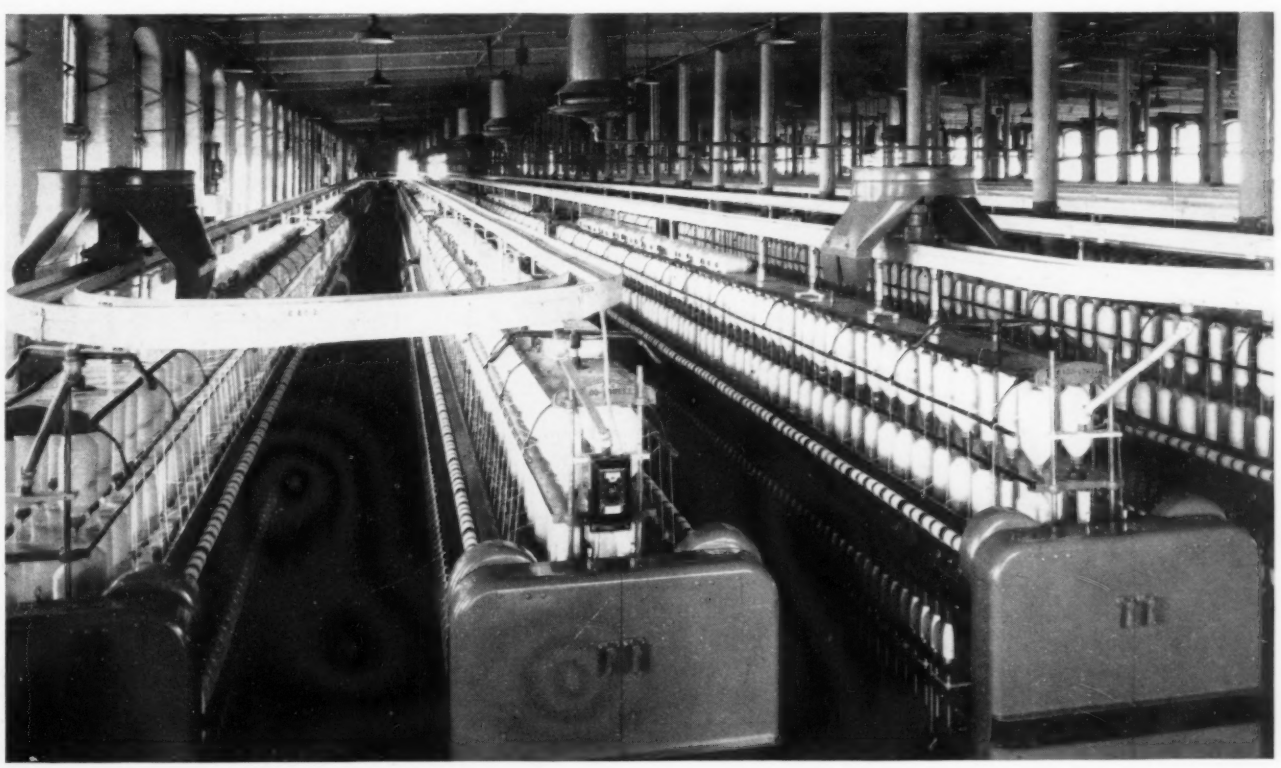
Of the remaining 168 frames, Saco-Pettee with 224 spindles each, 2¾-inch gauge, 120 were retained on filling, and 48 were retained on warp. Some time ago, the mill changed from a 7⅜-inch filling quill to an 8-inch quill. On the 48 frames retained on warp, the ring size was increased from 1 11/16-inch (7-inch traverse), producing 2.75 ounces of yarn (net), to 1 15/16-inch which produces 3.4 ounces of yarn (net) per bobbin.

All of these retained frames were then equipped with Saco-Lowell long draft system; each was equipped with individual motor drive with v-belt, in a general electrification program for the whole mill, which has just been completed. In making this change the existing frames, warp and filling, were each equipped with dual control switches of the magnetic-contactor type with starting switch at one end of the frame and a control switch at the other.

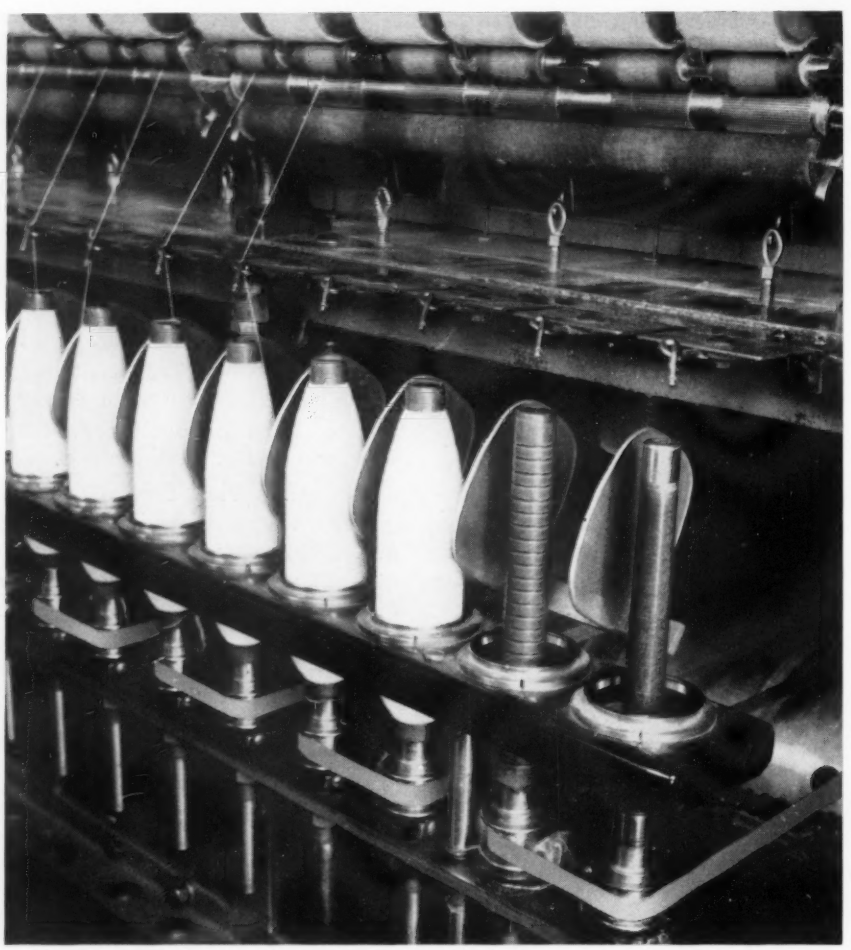
The New Frames

The new spinning just installed at Dallas consists of 56 entirely new Saco-Lowell long or better draft spinning frames, 3½-inch

A general view of some of the 56 new spinning frames at The Dallas Manufacturing Company, Huntsville, Ala.



gauge, 2¼-inch ring, 276 spindles per frame. The spindle speed, on 21½s yarn, is 9,400 r.p.m.; the front roll speed is 136 r.p.m. The package is 9-inches in length overall, and there are 5 ounces (5,700 yards) of yarn (net) per package, as compared to 1.92 ounces on the original warp spinning. A spinning doff runs approximately 8 hours, with four packages supplying one cheese for the automatic spooler. A comparison of the original warp bobbin and the package made on these new frames may be seen in the illustration on the next page.



Illustrating the principle of sleeve-spindle, paper tube spinning. Right to left: first spindle shown empty, showing wooden sleeve and metal ferrule; next, a spindle carrying an empty paper tube; next, full packages of yarn on paper tubes . . . . . .

These frames embody a number of modern construction features. Ring rails, roller beams and spindle rails are of steel, reducing the weight of the frame and providing greater strength. Hardened steel ground cams are used for the builder motion; the builder arm and other parts in connection with the builder motion have been made heavier in order to take care of the longer frame and larger packages. The link chain on the builder is of hardened steel. The cylinder heads are made of steel. The jack and cylinder gears are cut spiral. Aluminum alloy separators are used, which are made solid, to break up the air currents produced by the high speed large packages.

The most novel and unusual feature of this new frame is the use of sleeve spindles with impregnated paper tubes, instead of the customary tapered steel spindle blade and conventional wooden warp bobbin. The use of this type of spindle and package is rather common in European and Oriental mills, and, while there are several contemporaneous installations of trial frames of this type in the United States, the Dallas spinning represents the first substantial installation thus far made, and as such warrants detailed description and the especial interest of the industry as a new development in this country.

Paper Tubes Instead of Bobbins

The principle of the sleeve spindle and paper tube may be readily understood by reference to the accompanying photograph made on one of the Dallas frames. The customary tapered spindle blade is replaced by a wooden plug or sleeve, carrying a metal ferrule at the top. Instead of a wooden bobbin, a hardened, impregnated paper tube (seen in place on the second spindle from the right in the picture) is used. This tube has from 1/10th to 1/6th the weight of a wooden bobbin for the same use. Its construction, along with that of the sleeve spindle on which it runs, is such that it is driven by spindle tip suspension, instead of seating at its base, as does the wooden bobbin.

The theory of this method is that with top suspension, the tube has a natural tendency to cling to the spindle; the tube itself fits the taper of the sleeve with clearances varying from .008-inch to .012-inch at the lower end. This type of drive is based on the mechanical principle that a mass supported at a point above the center of gravity can be revolved rapidly with less vibration than the same body supported below the center of gravity.

This type of operation, it is explained, prevents vibration of spindles at the top with its consequent wear of bobbins and spindles, oil pumping, excessive bolster wear and bobbin slippage. The use of the wooden sleeve on the spindle blade also produces a better distribution of the total weight of the spindle, which, particularly with the higher speed and larger and heavier package involved, results in more steady operation.

The mill was already equipped with Barber-Colman automatic spoolers equipped to handle the regular wooden warp bobbin, so that minor changes were required at this machine to accommodate the new paper tube and the larger package produced on the new spin-

ning. These changes consisted (1) of increasing the size of the bobbin pocket on the spooler to take care of the larger package, and (2) of changing the bobbin holder in the pocket to handle the tube instead of a bobbin. This latter change, already worked out by the machine manufacturers in conjunction with the new type of package, consisted merely of substituting a new type of skewer carrying a small dog which, when the package is raised into winding position, extends to press against the inside of the tube at the lower end to hold it firmly in place. This pressure is automatically released when the tube is empty and ready for ejection.

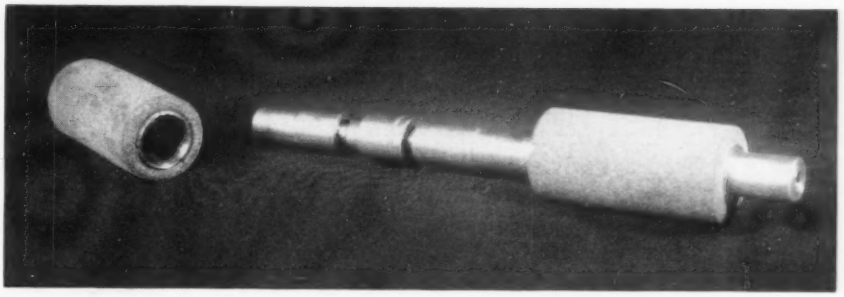
Otherwise, the spooler handles the new type of package in exactly the same manner as the conventional warp bobbin. Two of the mill's spoolers have been converted to this work, the others retaining the customary equipment for handling the wooden warp bobbins used on the remainder of the mill's warp spinning.

Thus far, other than minor adjustments of procedure, there has been no difficulty encountered as to doffing, piecing-up or starting-up with the use of the paper tube instead of a bobbin.

Anti-Friction Bearings

The advanced engineering of anti-friction bearings represents a prominent part in the design and construction of the new frame. The large-package spindles are the latest Saco-Lowell SKF roller bearing type; self-aligning ball-bearings are used throughout on the drum cylinder—for the outrigger, inboard and intermediate bearings. All of these anti-friction bearings and all of the cross-shaft bearings on the frame are equipped with fittings for pressure lubrication. The combination roller and ball bearing tape tension idler pulley is used; and the new type of ball-bearing shell roll, with cork cots, is used throughout on the front line of rolls.

The combined result of this general use of anti-friction bearings throughout, with up-to-date design of drive and motor and lubricating method, is to produce the important advantages of saving in power consumption, greater freedom and ease and uniformity of operation, reduced maintenance work and expense, and practical elimination of difficulty from lubricant getting on the stock in process, and on the rolls and other machine parts. The adoption of each of these features on the new frame was made in careful consideration of its own advantages and of its contribution to the general objectives along these lines. The oil-cushioned ring-brake roller bearing spindle provides greater ease of operation, minimized attention, and steadier running.

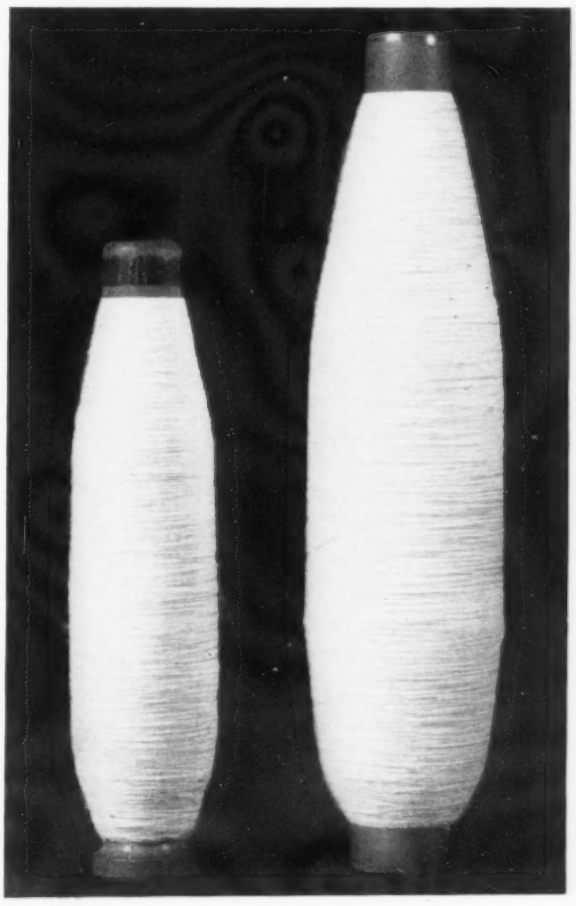


Ball-bearing cork covered front top roll, shown dissembled . . . .

An interesting point brought out in discussion of the tape tension idler pulley is that its greater freedom of action permits the use of a lighter and smaller tape, on this frame, a ½-inch tape, instead of a ¾-inch tape, is used, with a correspondingly lighter weight. The smaller body of the ½-inch tape provides less flexing to be done as the tape turns the spindle whirl, this in turn contributing to longer tape life and less load on the tape and bearings; a given cylinder speed will produce a greater, and more uniform, spindle speed because of this easier flexing.

Ball-Bearing Front Top Roll

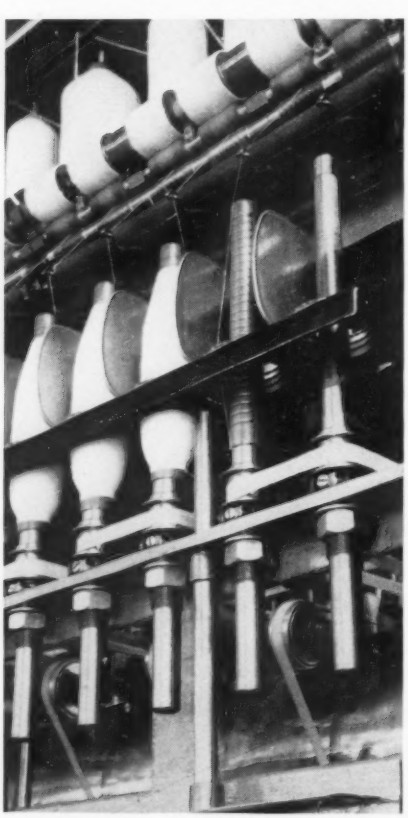
The new front top roll is unusual in its design and results. One of the Dallas rolls is shown dissembled with one of the shells removed in an accompanying illus-



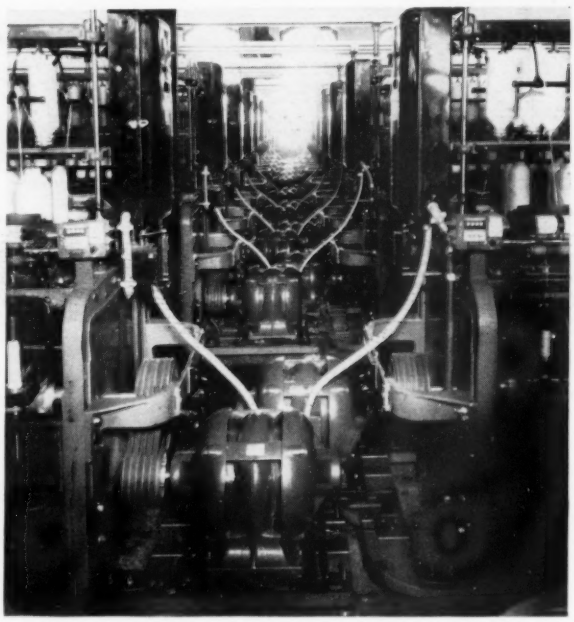
An impressive comparison: At left is an actual sample of the original warp bobbin made at Dallas, produced on a 1 11/16-inch ring and containing 1.92 ounces of net yarn. This is the package discarded in favor of (right) the package made on the new frames, on a 2¼-inch ring, with 5 ounces of net yarn. Bobbins shown in this reproduction at exactly one-half actual size . . . . .

tration. It will be seen that the roll is of the shell type, with a single ball-bearing assembly on each arbor, with a retainer ring which holds the cot in place. Greater ease of operation is provided by this type of bearing, which also requires a minimum of maintenance attention and lubrication, contributing to better quality of product and minimized roll and yarn damage from leaking oil. The second and back lines of rolls are likewise covered with cork. The revolving type of front clearer and flat clearer for the back lines of rolls are used. The supply package is on 10x5 roving bobbins, run single into the average number of 22½s sheeting warp yarn. A conventional type of creel, which is adjustable and also adaptable for 8x4 double roving, is used. Two-shift hank clocks are used.

Creel type overhead traveling cleaners are used, throughout all other spinning as well as on the new frames, in order to secure the full benefit of a better yarn by continuous cleaning. Each cleaner track covers 6 of the new long frames of 276 spindles each; and in the room containing the new frames, other track covers 8 of the shorter frames of 224 spindles each and 2 of the new frames. In the other spinning room, equipped with the shorter frames, each track covers 7 frames. The cleaning cycle is 4½ minutes.



Another close-up, showing the tape tension idler pulleys, the sleeve spindle and paper tubes . . . . .



A view down a motor alley of the new Dallas spinning, showing the 10-hp individual motors driving through v-belts, the switch-boxes; and the two-shift hank clocks . . . . . .

Prior to the installation of the new frames, and during the conversion of the older ones, the mill, as a part of its current modernization program, re-vamped and augmented its humidifying system; all spinning is now operating under a modernized humidification system of high duty heads and automatic controls.

All of the frames in the mill are now equipped with individual drive, driving with v-belt drive and Texsteel sheaves. The 56 new frames are each equipped with a 10-hp constant speed self-cleaning motor with sealed-tight ball bearings especially designed for textile mill use, with Thermoguard protection, which is a thermal device mounted on the motor winding which automatically disconnects the motor from the line in the event the motor temperature rises excessively. The motor bases are manually adjustable. Each motor is controlled by a combination line starter with no fuse breaker disconnect.

The new and modernized spinning installation represents only a part of a current and continuing modernization program at the Dallas plant, in which several major features, including the replacement and modernizing of weaving and other productive and auxiliary equipment, yet remain. It is therefore impossible to measure adequately at this time the contribution of the new spinning to the efficiency of the plant as a whole and its product, for the inter-relation of all factors, many of which are yet in process of change, preclude this. Accordingly, no effort is made here to anticipate specific results, nor even to evaluate in definite terms the results of the new spinning itself. Time and experience are required for that. The purpose of this article has been solely to describe a substantial installation of new design spinning which incorporates many of the latest features, and thus to depict at least some trends in spinning frame design and construction and in spinning room practice.

LIST OF PRINCIPAL EQUIPMENT AND SUPPLIES—NEW SPINNING AT THE DALLAS MANUFACTURING COMPANY, HUNTSVILLE, ALA.

Spinning frames, Saco-Lowell Shops.
Roller-bearing spindle bolsters, roller-and-ball-bearing tape tension idler pulleys, self-aligning cylinder bearings, SKF Industries, Inc.
Pressure lubrication fittings, Alemite Division, Stewart-Warner Corp.
Ball-bearing front top rolls, New Departure Division General Motors Corp.
Seamless cork cots for top rolls, Armstrong Cork Products Co.
Paper tubes for sleeve spinning, American Paper Tube Co.
Two-shift hank clocks, Veeder-Root, Inc.
V-belt drives and sheaves, Allis-Chalmers Mfg. Co.
Motors, switches and controls, Westinghouse Elec. & Mfg. Co.
Electrical installation, J. M. Clayton Co.
Traveling overhead cleaners, Parks-Cramer Co.
Humidification equipment, American Moistening Co.

THE companies, whose advertisements appear on the following pages, are among the leading organizations furnishing equipment, supplies and services for the new spinning installation at The Dallas Manufacturing Company:

- Alemite Division of Stewart-Warner Corp.
- American Moistening Company
- American Paper Tube Company
- J. M. Clayton Company
- New Departure Division of General Motors Corp.
- Saco-Lowell Shops
- SKF Industries, Inc.
- Westinghouse Electric & Mfg. Co.

. . . an improved Spinning Ring with

Vitritex finish

durable . . . smooth as glass

15,456 Vitritex Rings are used on 56 new frames at the Dallas Manufacturing Company.

The Vitritex Finish assures "smooth-going" traveler performance from the moment these rings are installed. There are no unduly prolonged breaking-in periods. This new ring has a traveler surface which is wear-resisting and as "slippery as an eel."

IT'S IMPROVEMENTS ARE SIGNIFICANT:

LONG-LIVED PERFORMANCE — The finish is not merely a polished surface . . . the full thickness of the outer case is preserved.

UNIFORM SURFACES in all rings produce equality in tension and balloon.

TARNISH RESISTANT— The application of the finish seals the microscopic pores thus inhibiting the corrosive effects of atmospheric moisture and gases.

SMOOTH, GLASS-LIKE SURFACE has a desirable effect on traveler consumption, a factor of importance in any spinning room.

BREAKING IN — As a rule rings can be started at normal production speeds immediately after installation.

OUR ENGINEERING STAFF is anxious to give you more specific facts about the ring with the Vitritex Finish. Please write for bulletin C.

PAWTUCKET SPINNING RING COMPANY

(Subsidiary of Saco-Lowell Shops)

CENTRAL FALLS · RHODE ISLAND

This Modern Spinning Installation is *Alemite Equipped!*

Dallas Manufacturing Company's 56 New Saco-Lowell Frames Fully Protected Against Wear, Excess Power Consumption and Dirt

CONGRATULATIONS to Dallas Manufacturing Company on the completion of its modern spinning installation! Alemite is proud to be a part of it—proud to be chosen to stand guard against bearing failures, excessive maintenance costs and contamination of yarn.

Alemite Guns, power or manually operated, perform a similar service in thousands of textile mills. They force the lubricant *into* the bearing where it belongs. Alemite Lubrication Fittings on Saco-Lowell and other leading textile machines are *closed to lint, dust, and grit*—open only under pressure to admit lubricant. Machines thus equipped work better, last longer, require less maintenance.

Learn how Alemite Lubrication can increase *your* profits by speeding production, eliminating contamination, cutting maintenance costs! Write today for our new catalog.

ALEMITE

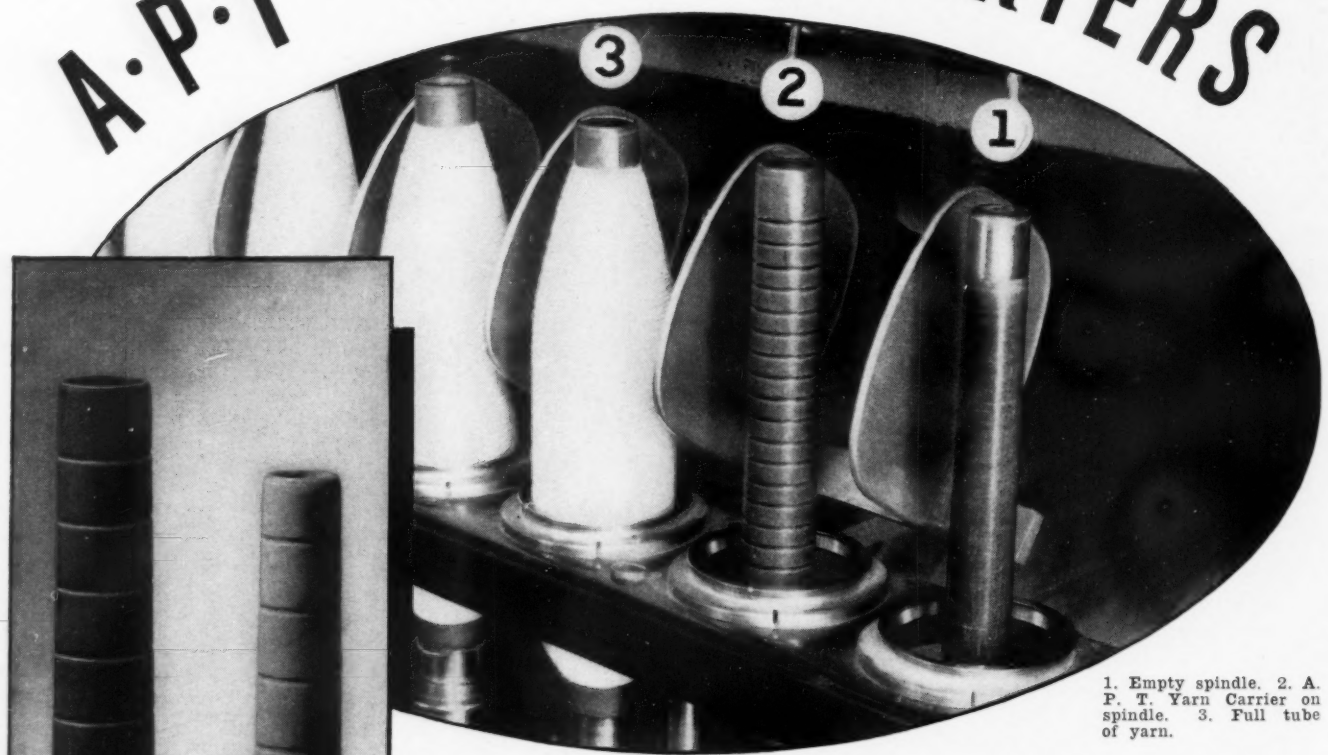
REG. U. S. PAT. OFFICE

WORLD'S LARGEST MANUFACTURER OF LUBRICATION PRODUCTS

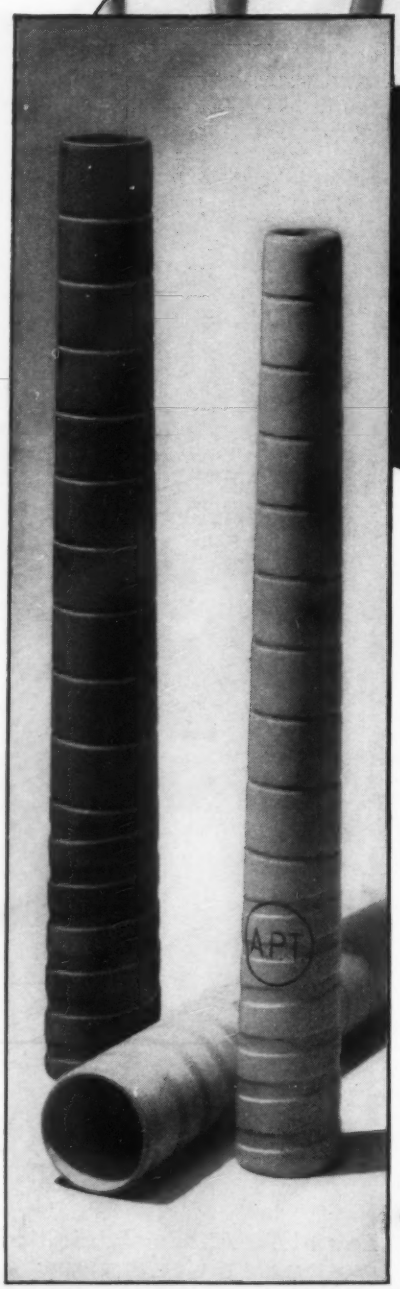
A Division of Stewart-Warner Corporation, 1884 Diversey Parkway, Chicago, Illinois.

Stewart-Warner-Alemite Corporation of Canada, Ltd., Belleville, Ontario

A·P·T· YARN CARRIERS



1. Empty spindle. 2. A. P. T. Yarn Carrier on spindle. 3. Full tube of yarn.



CHOSEN FOR THE NEW BETTER DRAFT HIGH SPEED COTTON SPINNING BECAUSE:-

1. Their light weight and perfect balance eliminate spindle wear and reduce power load.
2. Their design and natural resiliency make possible tip suspension with perfect spindle cling.
3. They are low in initial cost and most economical in the long run.
4. They can "take it". Though made with a paper base, they are no more paper than concrete is sand. Paper, adhesive and special impregnating materials are combined in this product to form a new substance which will last for years, having great resistance to splitting, chipping, splintering and to warping, even in high, humid temperatures.

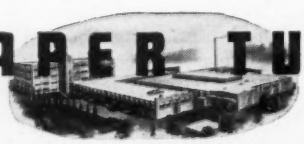
A. P. T. yarn carriers have been successfully adapted not only to spinning, but also to twisting and weaving of cotton, wool, worsted, silk and rayon.

If you have a bobbin problem, why not find out if A. P. T. yarn carriers will solve it better than what you are using now?

Showing the new A. P. T. spiral-annular grooving effecting easy stripping without sluffing off of yarn.

THE FINEST TAPERED TEXTILE TUBES QUILLS & BOBBINS

AMERICAN PAPER TUBE COMPANY



INCL. SHAMBOW SHUTTLE DIV. WOONSOCKET, RHODE ISLAND

AGENTS: Ernest F. Culbreath, 602 Commercial Bank Bldg., Charlotte, N. C. (tubes only); M. Bradford Hodges, P. O. Box 752, Atlanta, Ga. (shuttles only); Earl D. Melot, 322 North 15th St., Allentown Pa. (tubes and shuttles).

CONTRIBUTING to the efficiency of the new Dallas Manufacturing Company installation is the New Departure Ball Bearing top roll, a cooperative development of our engineers with the Saco-Lowell Shops.

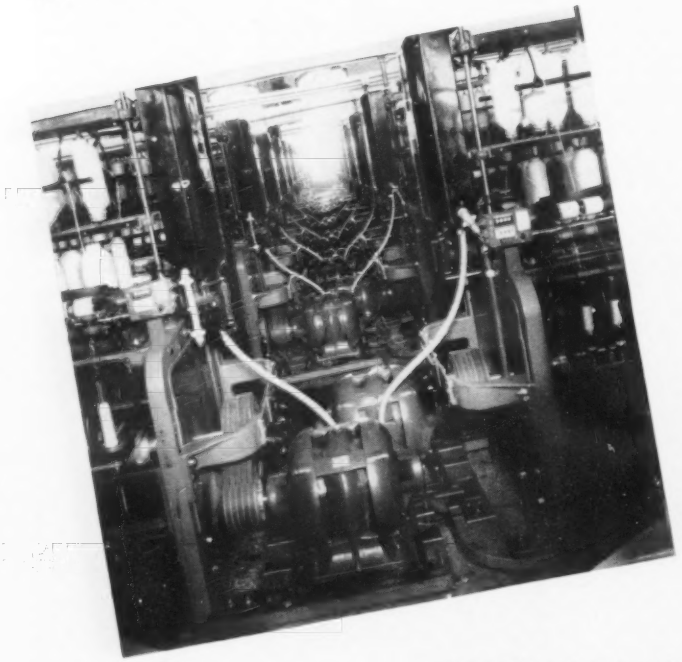
The advantages of these rolls are: . . . Cleanliness . . . Long life of roll covering . . . Lubrication not more than once every 12 months . . . A saving in power . . . Better yarn due to reduced slippage.

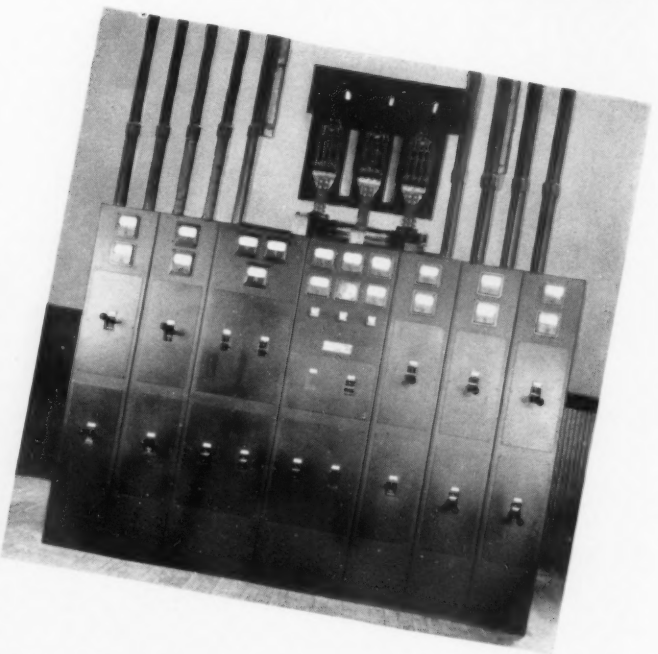
NEW DEPARTURE Ball Bearings

New Departure • Division General Motors Sales Corporation • Bristol, Connecticut

NOTHING ROLLS LIKE A BALL

ANOTHER **CLAYTON** *INSTALLATION*





CRAFTSMANSHIP
RESPONSIBILITY—EXPERIENCE

In 1920, when Mill Number 1 of The Dallas Manufacturing Company, Huntsville, Alabama, was electrified, the J. M. Clayton Company was selected to do the job.

The photos above show a portion of the electrical equipment included in the current modernization program in which Mill Number 2 was completely electrified and 56 new spinning frames installed. The Clayton Organization was again selected to execute this work.

This installation is typical of the service the Clayton Company has been rendering the textile industry for 32 years.

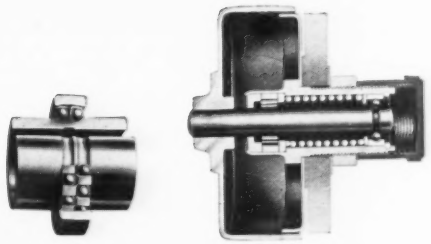
J. M. CLAYTON COMPANY

CONTRACTING ELECTRICAL ENGINEERS

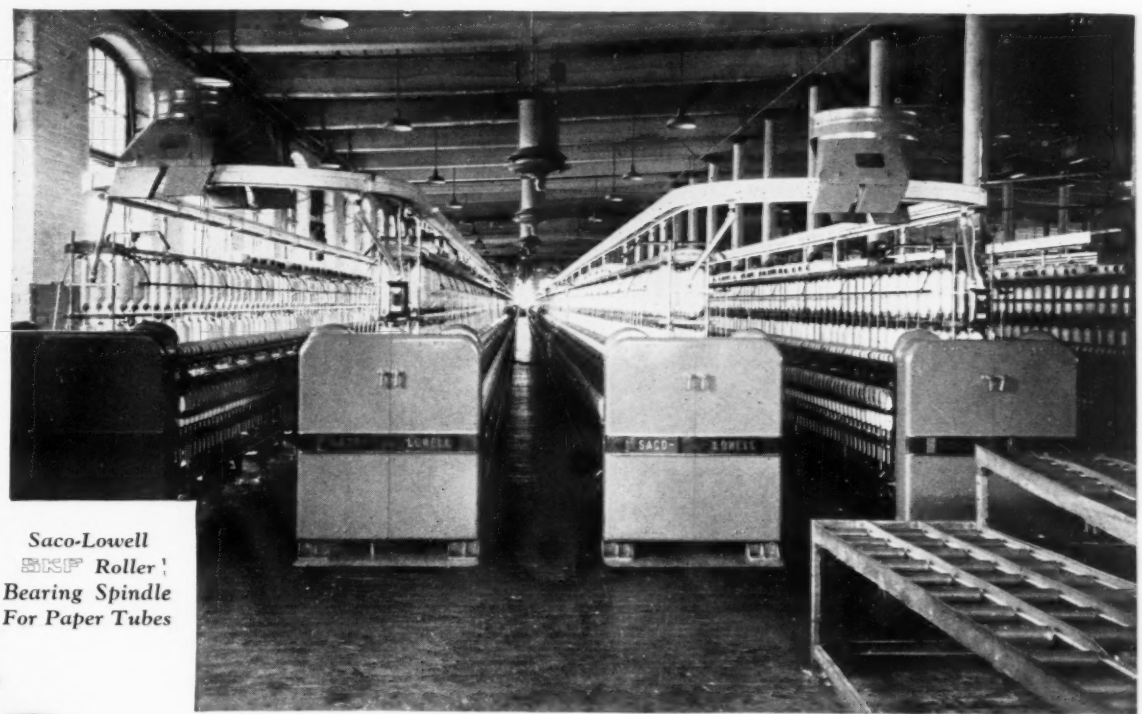
ATLANTA, GEORGIA

J. E. MELLETT, President

DALLAS MFG. CO.



SPECIFIES SKF THROUGHOUT 56 SACO-LOWELL SPINNING FRAMES



Saco-Lowell SKF Roller Bearing Spindle For Paper Tubes

15,456 SKF SPINDLE BOLSTERS, 3,864 SKF TENSION PULLEYS, AND 448 SKF BALL BEARINGS INSURE BETTER SPINNING

● Both Saco-Lowell Shops and The Dallas Manufacturing Company recognized the many advantages of SKF Roller Bearing Spindle Bolsters, SKF Tension Pulleys, and SKF Cylinder Bearings when they planned this outstanding installation of modern spinning. For Saco-Lowell recommended SKF "extras", and the Dallas Manufacturing Company specified them.

SKF Roller Bearing Spindle Bolsters assure uniform operating speeds with 18–25% savings in tapes and input power . . . and additional economies in lubrication. More than 12,100,000 are in worldwide use.

SKF Tension Pulleys help spindles maintain high speeds, reduce friction's drag, and provide 5% to 11% power input savings. The world's spinning frames are using more than 2,000,000 of them. SKF Self-Aligning Ball Bearings turn with drum cylinders without binding despite small but costly misalignments caused by warping frames and settling floors.

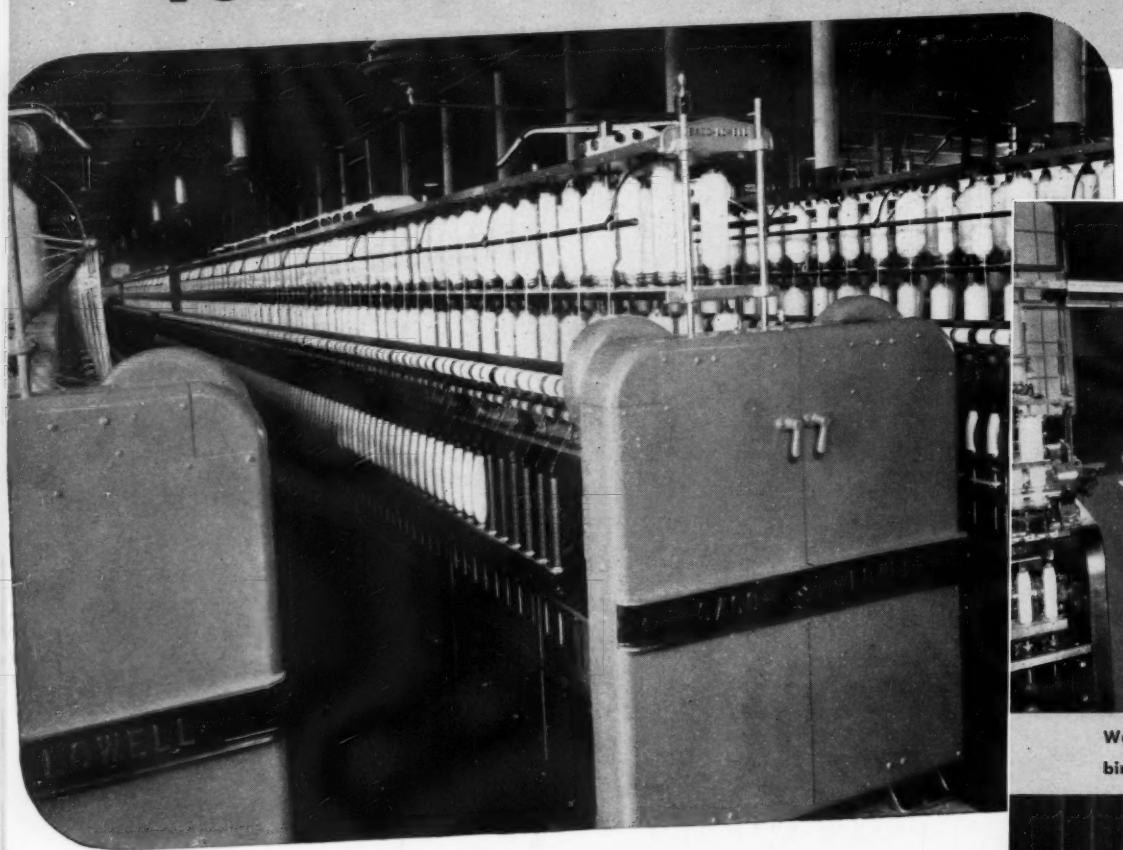
We appreciate the fact that when leaders in any industry have a bearing problem, they bring it to anti-friction headquarters—SKF. You won't go wrong by following their example.

4428

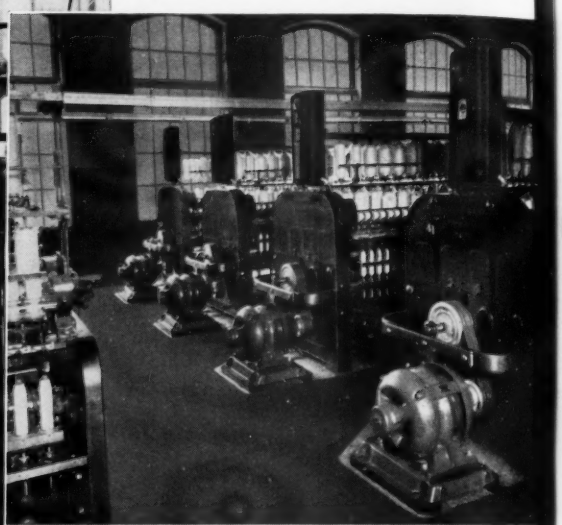
SKF

Ball and Roller Bearings SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA.

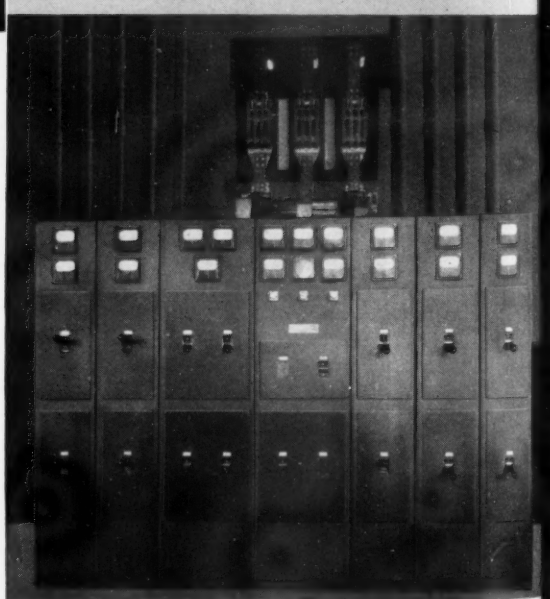
The latest in MOTORS for the latest in SPINNING



General view of new Saco-Lowell high speed, large package cotton spinning frames at Dallas Manufacturing Company.



Westinghouse Lint-free motors and combination Linestarters drive these frames.



Westinghouse switchboards, with AB breakers and flush type instruments, complete the electrical installation.

Progressive Dallas Manufacturing Company selects streamlined Westinghouse Lint-free motors to match newest type of spinning frames

When the Dallas Manufacturing Company, Huntsville, Alabama, decided to install the latest type high speed large package cotton spinning frames, they wisely decided to drive each frame with the latest type of motor equipment. They selected the newest and most thoroughly self-cleaning drives yet developed — Westinghouse spinning frame motors.

Features include smooth, highly polished windings, sealed ball bearings and streamlined surfaces. There are no pockets, corners or covers to catch lint or obstruct air passages.

And — to accompany these motors, are Westinghouse air breaker switchboards and combination Linestarters, to make this a completely modern electrical installation, the last word in safety, efficiency, cleanliness and economy.

Engineers on our textile staff keep our equipment fully adapted to the needs of the industry. Westinghouse Electric & Manufacturing Co., E. Pittsburgh, Pa.

J-90259

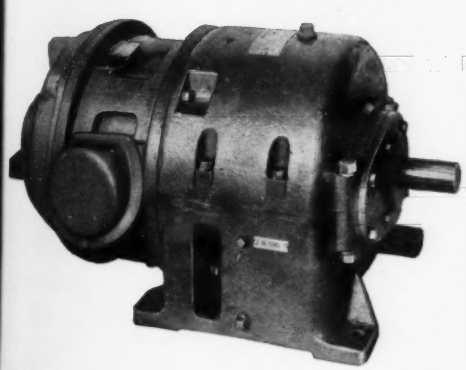
Westinghouse

W
WESTINGHOUSE ELECTRIC

Match your new machines

WITH MODERN DRIVES

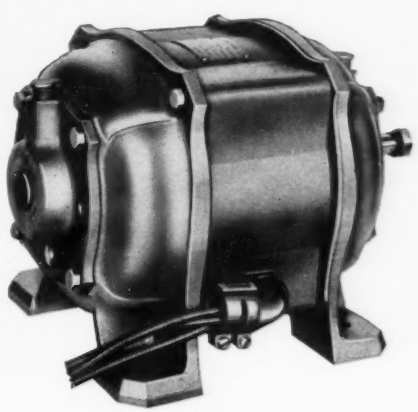
MOTORS FOR TEXTILE SERVICE



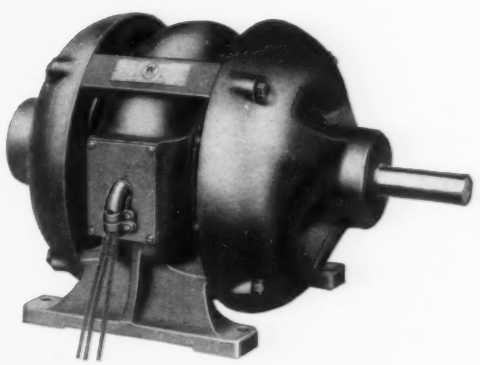
GEARMOTOR

HIGH EFFICIENCY FOR SLOW SPEED MACHINES—Westinghouse gearmotors deliver 96% to 98% of high speed motor efficiency for slow speed drives. Ultra-quiet because of new accuracy in gear manufacture — save cost of separate mechanical units.

BORN AND BRED FOR THE WEAVE SHEDS — these motors have ample overload capacity; unit frame construction and vibration-proof fittings save maintenance; adaptable for floor or three point suspension mounting.



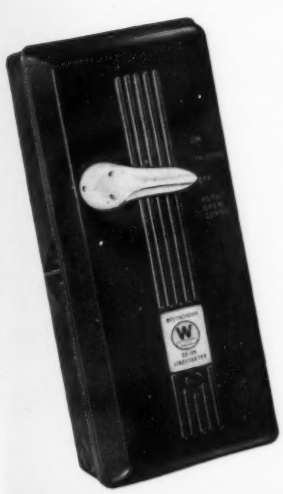
NEW LOOM MOTOR



NEW LINT-FREE MOTOR

FOR IMPROVED PERFORMANCE on individually driven pickers, roving frames, spinning and twisting frames. Smooth windings, highly polished with no corners or bumps to catch lint. Permanently sealed bearings, no greasing required. Integral cast parts for mechanical strength. Protection against high maintenance costs.

...WITH CONTROLS TO MATCH



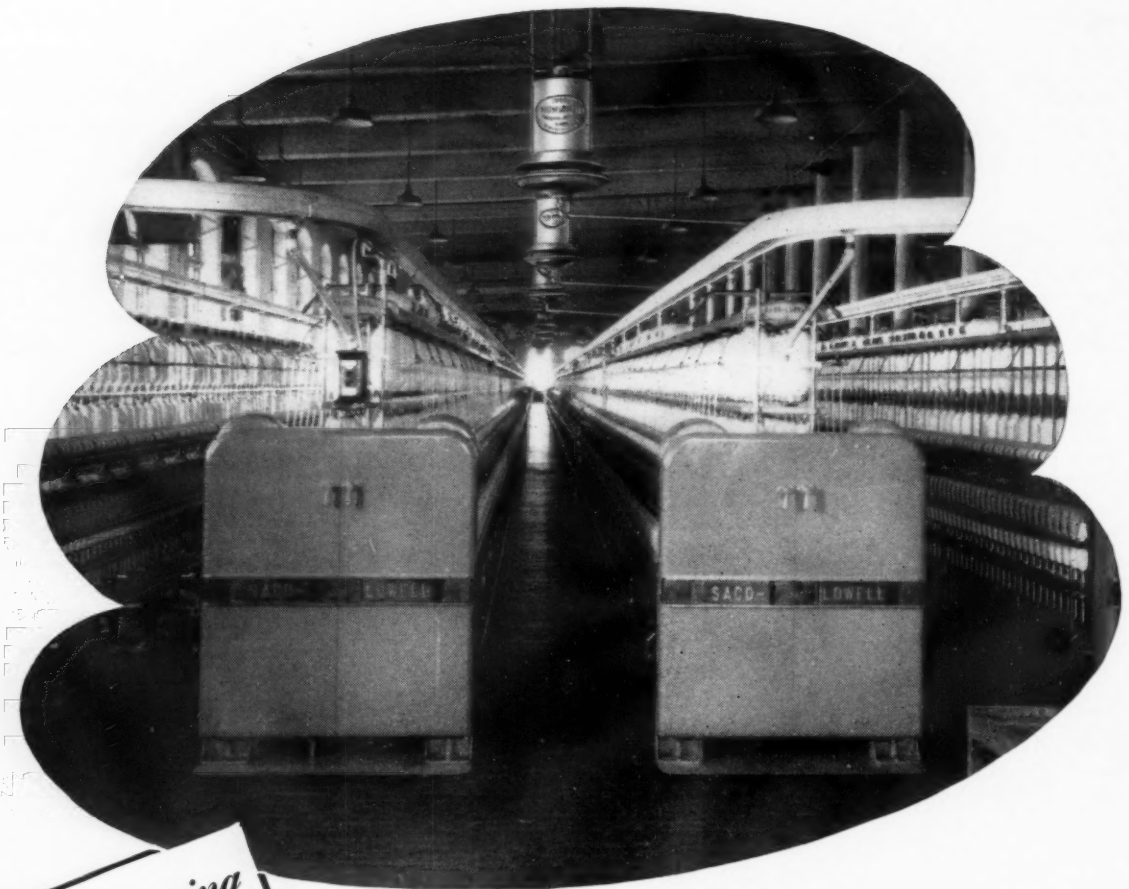
COMBINATION LINESTARTER

SIMPLIFY CONTROL INSTALLATION — save space, labor and conduit with Westinghouse Combination Linestarters. Sheet metal enclosure combines all needed devices in motor circuit in one unit — saves first cost and operating costs.

TROUBLE-FREE SERVICE AT NO EXTRA COST in this brand new compact unit. Easy to install on panel, machine, wall or column. Indicator shows whether handle is on, off, or tripped. Bimetal disc for automatic overload protection.

MOTOR WATCHMAN LOOM SWITCH

Motors and Control



Modern Spinning demands "Clouds" of Moisture

DALLAS MANUFACTURING COMPANY

Modernized With

AMCO HEADS AND CONTROLS

Modernization of spinning at Dallas Manufacturing Company with the new Saco-Lowell "Better-Draft" Spinning Frames required that humidification, too, be brought up to date. Higher heat generation, and increase in fly are easily overcome by the installation of Amco High-Duty Humidifiers and Amco Humidity Controls.

The Amco Humidifiers provide an unusually high capacity, exceeding even the large evaporation demand of the hot, dry air in the spinning room. Their motor-driven fans assure most efficient distribution of manufactured spray. The sensitive, reliable Amco Controls, unaffected by temperature changes, automatically regulate and hold humidity at the proper degree for most efficient spinning, within extremely close limits.

Modernization with Amco may offer an opportunity to boost your mill's profits. Why not let an Amco engineer check trouble-points, without obligation? American Moistening Company, Providence, Rhode Island . . . Boston . . . Atlanta . . . Charlotte.

AMCO HUMIDIFICATION

TAKE YOUR TEXTILE HUMIDIFICATION JOB TO THE TEXTILE HUMIDIFICATION SPECIALIST

CURRENT TEXTILE TOPICS ....

Talk of the Month

WRITING on the status of business late in August, one found himself confronted with a strange combination of confidence and uncertainty. The national economic situation was indubitably encouraging. The uncertainty was purely political—European machinations—but nevertheless an economic factor. By the time this has been published the latter will have had effect for better or for worse. Meantime, we must treat of fundamentals and leave the political alone as an unpredictable affair.

Double challenge facing industries of the nation

Right through the summer, the national economic news surrounding the cotton industry was auguring a forward surge that promised at last a fair permanency of recovery. The automobile industry, in decline at the end of the 1939 model season, remained twice as active as a year ago. The steel industry rose to unexpected peaks on a diversity of miscellaneous business, before large specifications came from the auto makers on new 1940 models.

Auspicious reports were coming from other lines of industry and along therewith was a reflection of improved purchasing power in the consumer demand for merchandise. Some of this went hand in hand with the booming residential construction business. Household goods must be bought to furnish new homes. This applies to manifold textiles as well as appliances. Thus retail volume was running better than that last year through the summer.

Therein lay the promise of continued expansion in the fall and that season cast its shadow before in the wholesale merchandising field. Mills were reflecting the preparations of wholesalers and chain distributors for a larger fall by the end of spring. By August they found indications, at least in some lines, that initial preparations had underestimated requirements and the month found indicated needs still accumulating in secondary markets.

Congressional adjournment, meantime, brought from the President a note of alarm quite inconsistent with the favorable fundamentals. The refusal of Congress to accept the Administration's wishes on lending-spending caused Roosevelt to put on the legislative body the blame for hardships that might ensue from another slump in business.

As a matter of fact, many economic observers in favor of a digression from the course toward government insolvency under the New Deal had heralded the action of Congress as a challenge to private industry before the President uttered his dire words. And the new situation is such a challenge. Industry is on the right foot, to a fair extent. But it must go a long way toward healthy absorption of unemployment if further social-economic experiment and reform are to be obviated.

Industry is faced, moreover, with a double challenge and nowhere more than in the cotton-textile industry. The basis of progress unequaled outside the United States during 150 years of the country was individual initiative and profit. Employment grew on profits. But such big industries as steel and cotton manufacture today are in the throes of competition on a severe basis destructive of profits, or barely emerging from such a position right now.

Fortunately the cotton industry is embarked on a program that should remove forever, at least to a reasonable extent, the curse of cut-throat competition. Seasonal changes are in the natural order of things, but prolonged subjection to pressure for prices below cost of production is altogether unreasonable. The mills have now taken a course which,

King Cotton Goes "Hollywood"

The contract for the first reel of a motion picture in technicolor of the cotton industry has been made and production is scheduled to begin immediately. The film is expected to be ready for release on or about October first and will be distributed through Columbia Pictures for showings throughout the entire United States. The producer is B. K. Blake, Incorporated. The script was written by M. D. C. Crawford, a leading authority on the history of textiles, and was technically adjusted to the requirements of screen production by I. A. Jacoby.

The undertaking is being carried out under the direction of a motion picture committee consisting of heads of a number of the more important trade associations within the industry.

The first reel which has just been contracted for is only the beginning of a much larger project which will eventually include four or five reels with an approximate showing time of fifty minutes. The purpose is educational, the picture being designed to supply the audience with an authentic and comprehensive view of the varied roles which cotton plays in the social and economic life of the country. It will portray the growing of cotton on a typical southern plantation, the processes of harvesting, ginning, pressing and distributing cotton as a raw material. It will also include all of the operations of manufacture, including finishing and fabrication, and will provide close-ups of every important type of cotton processing. It will embrace scenes from the community life of the textile areas and will portray all of the more important uses of cotton and its products. The historical background of the industry, including the early stages of development in New England and the South, will be included.

In this first reel, emphasis will be placed upon high-lights of cotton agriculture and cotton industrial activity to provide a comprehensive understanding of the industry and a background adequate to an effective presentation of more detailed treatments to be contained in subsequent films.

The picture is being financed through voluntary individual contributions from all members of the industry and allied activities. Subscriptions are being solicited by the motion picture committee and are being directed to all those whose major business activity or source of livelihood is associated with cotton.

if they adhere to it, will accomplish a lasting reform.

It was evident during the past month that the industry had gone far toward remedying the distortion between production and demand through the first half of the year. Yet buyers perhaps were not convinced that a new condition of permanency was established. At any rate, the return to a market of profit levels for cotton goods was still to be achieved. The words of H. J. Blackford of A. M. Law & Co., Spartanburg, at mid-summer, may be worth recalling:

"This [production control] program is now in effect for three months, but probably should be extended for another three months in order to place the cotton gray goods market in a healthy condition. This balancing of production is far more essential to mill profits than any one item such as minimum wage, general business conditions, threats of war or anything else. The outlook for profits is much better and we should expect reasonably good business this fall provided the mill executives will act in a sensible manner."

From various sources have come suggestions that the last quarter will be the one period of 1939 to show a profit for the cotton mills. While gray goods were slow to advance through the summer, there were no setbacks. Encouraging for the rest of the year, too, was the strengthening tendency of finished cotton merchandise. Both shortage of supplies and favorable consumer attitude prompted buying at firm prices by the retail stores.

On general business recovery, moreover, diversified demand for cotton gray goods helped the mills late in the summer. Concentration on staple lines was relieved as mills found outlets for specialties and various other products. Such lines offered opportunities for mills to do business at better prices. Incidentally, it was asserted that curtailment in print cloths had created conditions warranting larger advances than realized through the summer.

New England Mill Situation

SENTIMENT among cotton manufacturers of the New England district became brighter through the summer, both on prospects for activity and profitable prices on goods. The progress of advances was disappointing, perhaps, but successive gains were well maintained and the basis established for further rise. Merchants in the primary market found themselves in a more favorable position between mills and accounts and the gloom of early in the year appeared to be dissipated.

In the very conservatism of buyers since the beginning of the summer was found an augury of sound conditions. Or rather, we may say, the subsequent business of distributors indicated such conditions through evidence that conservatism in initial business had been overdone. Either their business in finished merchandise had exceeded expectations, or they were accumulating for indicated broad fall activity.

Suggestive, meantime, of sound policy in the mills of this section through good and poor times is the recent report by the Pacific Mills for the first six months of the year. In spite of the generally poor period, this company reported net income of $59,846, against a loss for the like months in 1938 of $2,246,963. President Alfred E. Colby reported that mid-summer conditions in cotton manufacturing were encouraging, but the outlook depended upon keeping inventories under control and within the demands of the trade.

Another important unit, the Pepperell Manufacturing Company, reports excellent results for the year ended June 30, in view of the difficult period. Preliminary figures gave net earnings at $871,000, against a loss in the preceding fiscal year of $1,796,-169. Currently as of mid-August the plants were reported to be operating at capacity.

Among mill developments of this section was announcement that the recently formed Taber Mill Corporation of New Bedford had completed plans for a second shift. The plant had 30,000 spindles in operation and 260 workers on the payroll. It had started 250 looms and was preparing to double this number within two months. Tubular gauze for use in making bandages and shoe-backing cloths are made; also shirtings, dress goods and drapery fabrics. Orders to capacity were in hand at mid-summer.

Two old companies were involved in a deal under consideration in Massachusetts. The Farr Alpaca Company of Holyoke, in process of liquidation, had a cotton mill of 68,000 spindles on which an offer was made by the Berkshire Fine Spinning Associates. If the plan went through without hitch, the latter were to operate the unit on a normal basis, employing about 1,000 workers and with a payroll of $1,000,000 annually.

This action, if consummated, will save an important unit in New England and provide work for a substantial group of skilled mill workers. The announcement of the proposed transaction stated that the prospective buyers proposed to make payment in the form of a convertible preferred stock. The matter of important tax and other details also had to be ironed out.

Of opposite nature was the news that the Goodyear Fabric officials had rejected all efforts of New Bedford civic interests to save its plant there. S. A. Steere, general manager of the textile and fabric division of the corporation, stated that the plant would be dismantled. He said that some of the machinery would be sent to the Goodyear mills in the South and that the rest would be sold.

Lack of business was charged as the reason for discontinuing operations in New Bedford. Several southern mills had been closed for the same reason, according to Mr. Steere. The New Bedford plant suspended operations early last year. It was expected that work would be resumed as business improved. Labor, business and civic groups tried in vain to secure the reopening of the plant recently.

Some consolation for this loss was had from a letter notifying the New Bedford Industrial Development Legion that an offer had been made to the

Goodyear company for the plant. A manufacturer of awning cloth, hammocks, canvas, duck, etc., was reported seeking the plant intact, although the name was not revealed.

The Westerly plant (Rhode Island) of the American Thread Company was sold recently to a syndicate of three business men of the town and of Stonington, Conn. The plant has been idle since the hurricane of last September. The buyers were reported planning to sell or lease the mill.

Vicissitudes of the cotton mill industry since the days of expansion long ago are reflected in late developments on two well-known units of New Bedford. In March, 1938, the city sold the Butler and Whitman mills to Lewis L. Scott of St. Louis for $5 each, on agreement that he would provide 300 jobs in the former and 500 in the latter within 18 months.

Mr. Scott in June last sold the Whitman property to a canning firm for $28,000 and the city received $500 from the purchasers. He then asked that the Butler mill deed, which had been withheld, be delivered to him as he had prospects of disposing of it to another industry. The deed was forthcoming, with the original stipulation again set forth.

By a vote of 1324 to 1151, the Textile Workers Organizing Committee Local 74 (CIO) was chosen as the bargaining agency for approximately 3,000 employees of the Naumkeag Steam Cotton Company of Salem, Mass. This company operates the Pequot Mills and the Danvers Bleachery. The TWOC, it was stated, replaced the Independent Sheeting Workers of America, Local 1, as bargaining agency.

"THE SITUATION"

As Seen Across an Executive's Desk

August 18, 1939

THE COTTON-TEXTILE industry has become so used to thinking in terms of red ink that when good business is here very few sit down to think out the points upon which good business may be based and its activity measured. On the other hand, they just continue in a blue state of mind comparing today with '29 or '29 with war-times, and forget entirely that prosperity now is based on completely different factors than before. Cotton mills throughout the entire industry are running more consistently and approaching more nearly full capacity operation this summer than in any summer since 1933, which was abnormal due to NRA. 500,000 more spindles were operating last month than were operating the same month in 1938 and the ratio to full time (using 80 hours for all spindles) was 82 per cent in June of this year against 61 per cent a year ago. The seasonal lay-off and summer slump which we all expect and look for, refused to show up this year. As a result, aggregate weekly payrolls in the cotton-textile industry last month equalled $5,030,000. That is a sizable payroll and considerably above the payroll for the same period in 1938.

A buying movement which has been more or less continuous during the entire year has been a tremendous help and all indications today point to a better upswing for the immediate future, indicating pleasant prospects for fall.

The character and strength of the primary textile market has been excellent for the past few weeks. Grey goods volume has been fair, but steady. Price advances have occurred on most all items and for the first time in a long while the mill position points to profits. Shipments on all types of goods have been clicking right along and stock on everything, particularly yarns, has been depleted until there is no longer a comfortable shipping margin between the mill and the customer.

The Government opened bids of WPA cotton goods totaling 10,000,000 yards, all this to be delivered to work-rooms by November 1st.

Finished goods sales to manufacturers of garments and household goods have increased and the prices have strengthened. Retail sales of cotton goods increased with a big demand for summer wearing apparel and because of some spectacular promotion stunts by various big concerns which created consumer interest to a considerable extent. A considerable volume of unfilled orders are on the mill books, and since it is understood from all reliable sources that stocks of cotton textiles in channels of distribution are comparatively small, we may anticipate early shipment of goods in the unfilled orders bracket.

While all of this is tremendously encouraging, there are so many angles to the textile business these days besides manufacturing and selling or supplying and demand that one must prize the lid off of conditions existing in stocks and shipments and look beneath the general national conditions.

The Export Subsidy

The export subsidy, which has been on the horizon for a long, long time, was adopted by the Department of Agriculture and became effective July 27 despite registered protests on the part of all cotton shippers and on the part of all cotton manufacturers in this country.

Grave problems are presented to certain sections of the cotton-textile industry by the adoption of this program. Although cotton fabrics and yarns were included in the subsidy, every section of the industry should devote considerable time to study all angles of the subsidy as it affects their particular manufacturing group.

This is particularly important since the Department of Commerce has announced that they will hold a hearing at an early date in order to study the effect of the subsidy on cotton imports. Cotton manufacturers held that cotton goods could be imported into this country made from the subsidized cotton and under low foreign labor costs, which would wreck their markets and upset their price structure to a ruinous degree. Manufacturers of combed yarns think that some differential should be made between the subsidy allotment and combed and carded yarns

since they pointed out that the rebate set by the Government on exported goods during processing tax days was 121 per cent of the processing tax for combed yarn and only 112 per cent of the processing tax for carded yarns. The Carded Yarn Group and the Combed Yarn Spinners had set (during processing tax days) an arbitrary conversion figure which showed considerable difference between carded and combed yarn which was used in balancing old orders set in new governmental costs. These points were probably overlooked by the Department of Agriculture in its haste to publish subsidy figures, but it is sincerely hoped, since the Department certainly is trying to do a fair job, that a revision will be made which will protect the spinners of fine yarns who find some competition in best types of carded yarns and who wish to try to regain foreign markets lost in great part some years ago. At this writing, the Department of Commerce is holding a hearing on waste imports under the subsidy and it is understood that regulation of imports will be controlled by a quota system and not a tariff system.

Why the export subsidy anyhow? It is all very vague, but it was Mr. Wallace's pet idea which seems to be explanation enough in New Deal dealings. The truth of the matter is that he found himself in a desperate situation. Just how desperate the following facts tell us:

In 1928 the world took 7,529,000 bales of American cotton. It is now taking less than 4,000,000 bales.

In 1928 the output of rayon was equivalent to 738,000 bales. It is now equivalent to 4,500,000.

In 1928 foreign production was 11,331,000 bales. It is now 17,339,000 bales.

The surplus of cotton is the largest in history.

The world price of cotton is the lowest in history.

World consumption of cotton is steadily increasing, but consumption of American cotton is decreasing both at home and abroad.

We do not believe this program will solve the problem. We still are of the opinion that the only way to solve it is through research and promotion and we still hold that if the millions of dollars which go for paying for the export subsidy program had been diverted toward a gigantic research program for the cotton-textile industry, Mr. Wallace's chestnuts would not be scorching.

On the raw cotton barter problem with Great Britain considerable confusion seems to have prevailed. The inland warehouses have won their fight to sample the cotton at the warehouses where it is now located.

The amendment along the above lines adopted by the House and Senate was in direct conflict with the provisions of the treaty which provided that the cotton should be sampled at port warehouses. In order to carry out such an agreement, between 2½ to 3 million bales of cotton would have to be moved from interior warehouses to port warehouses and tremendous expense would have been involved, but more important, a tremendous loss to the port warehouses. Now the Government must sample the lotton at inland points and remove only such bales as meet specifications, then at the port warehouses it will be resampled again under the terms of the treaty, making a double expense to the Government.

The sale of ¼ million bales of cotton to Spain is an interesting thing inasmuch as the Export-Import bank has agreed to participate with American cotton shippers in financing the sale at the rate of 25,000 bales a month, the credit to be guaranteed by leading Spanish banks and assurance given by the Spanish government that dollar exchange will be made available to meet all obligations. This means that Spain, so long war-torn, is definitely entering the textile field again for rehabilitation now but probably for additional world market supply later.

The New Cotton Contract

The new cotton contract, bitter bone of contention between shippers and manufacturers during the past year, has been adopted by the New York Exchange. Time-honored ⅞-inch staple loses its social standard in favor of 15/16-in. This is recognition of the improvement in cotton-seed which has displayed such quantities of ⅞-inch that it was impractical to deal with it as a basis.

The new contract seems to be a workable compromise between contending groups and went into effect August 15. The old contract will continue in use simultaneously with the new until the expiration date of the most distant months now on the board. The belief is widely expressed that trading will switch to the new contract so that at no distant date the volume in the old form will be negligible. Differentials between the old and new contracts, some estimate, may run as high as 30 points.

The motive back of the change, proponents say, is to provide a contract more in accord with present offerings of and demand for the various grades, staple of 15/16-inch occupying somewhat the same place of prominence formerly held by ⅞-inch. The trend toward higher quality cotton and a growing demand for higher quality are said to have been the governing considerations in drawing up the new contract. It is described as a broadening of the contract base.

The new contract differs on nine points:

1—The new contract will be based on middling 15/16-inch cotton, instead of 7/8-inch.

2—Middling spotted is deliverable when and if the Secretary of Agriculture establishes a type for such grade. Under the old contract, middling spotted was not deliverable.

3—Those who receive a notice for delivery of cotton will have one hour's time to pass it on, instead of 15 minutes as at present.

4—Two new staple lengths—29/32-inch and 31/32-inch—will be added under the new contract.

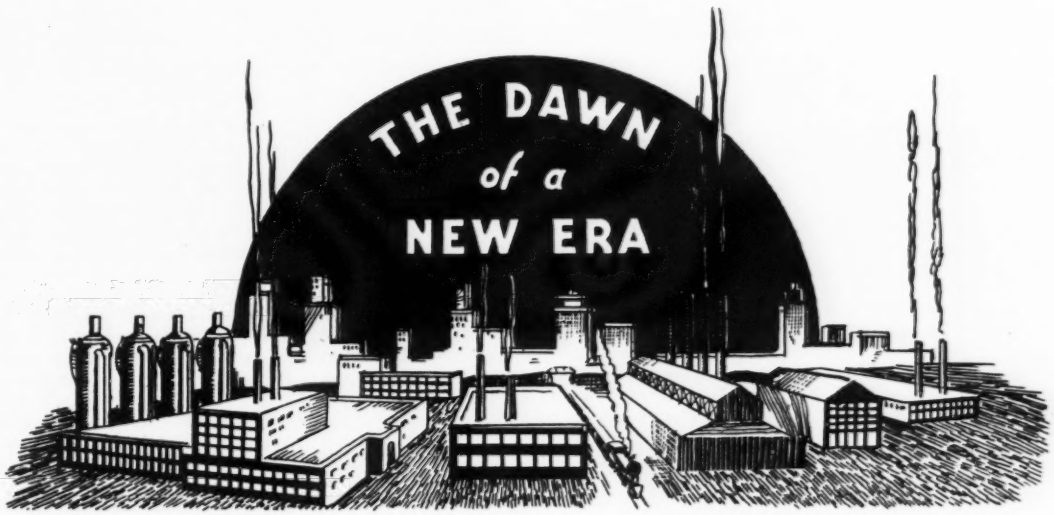
5—Standard and high density compressed cotton will be received on contract on the same basis whereas under old contracts, standard density was called for.

6—Staples over 15/16-inch to 1-inch shall be deliverable at 75 per cent of the commercial premiums over 15/16-inch, whereas old contracts specified 60 per cent of commercial premium for deliveries of 15/16 and 1-inch over 7/8-inch.

7—Staples under 15/16-inch shall be deliverable at full commercial discounts.

8—Non-rain grown cotton is tenderable only in grades of middling and above, and in staples of 1 1/32-inch, or longer. Old contracts barred this cotton.

9—Cotton remaining under certification ten months shall be penalized 15 cents per bale per month, beginning with the eleventh month.



Southern Factoring For Southern Industry

THERE is no question as to the value of Factoring in hastening collections, regulating manufacturing operations, flow of income and, in emergencies, provide immediate financial assistance in accordance with Industry's need of cash.

Southern Industry is now, for the first time, offered a Factoring Service which is Southern in scope, and includes an inherent knowledge of their business through proximity to it, plus speed in closing each transaction thereby lessening interest charges.

Adequate capital to finance the Industry's needs, and a thorough understanding of the problems and speed are outstanding features of this service. Combined they mean more profitable operations for Southern Industry.

For Information and Details, address

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ATLANTA, GEORGIA

One of the most important conferences scheduled in many years is the World Cotton Conference to be held September 5th, when the present Administration hopes to come to some agreement with representatives of other nations as to America's share in the world market and how she will regain it. It is hoped that major cotton exporting nations will agree to an equitable division of export markets and to general production control methods which would make their production figures compatible to those of the United States. This conference makes us believe that Mr. Wallace thinks there is a Santa Claus.

COMMENT on the Cotton Market

New Orleans, August 19, 1939

DURING the past month, general trade accounts were encouraging; there was unfavorable weather in the eastern half of the belt for the growing crop; a subsidy on exports of raw cotton and cotton goods became a reality; and there was improvement of late in the demand for spots. Nevertheless, there was no animation in the market, due largely to the fear of war in Europe, and because of the very large world's carry-over of American lint cotton on July 31, the close of last season—13,438,000 bales, of which 12,326,000 bales were in the United States and only 1,112,000 bales in foreign countries. Last year's world's carry-over of American lint cotton was 12,955,000 bales, and year before last it was only 5,740,000.

Of this year's carry-over of American, 11,060,000 bales were tied up in Government loans; the amount of "free cotton" at the close of July being estimated at only about 407,000 bales.

According to the New Orleans Cotton Exchange, the tragic episode of the past cotton season was the paucity of American cotton exported, the quantity of lint cotton shipped abroad being only 3,414,000 bales, the smallest since the season of 1881-82. It is of interest to note that in 1859, just prior to the Civil War, or 80 years ago, the exports of American cotton amounted to more than they were the past season —3,535,000 bales, although the growth that year was only 5,387,000 bales.

In 1926, prior to the Government's cotton program, the South produced 17,755,000 bales, and this huge crop was marketed at an average price for Middling of 12.96 cents per pound, and in that year 7,190,000 bales were exported, which is an example of the merchandising ability of the cotton merchant. There were no Government loans on cotton crops in those days.

This season the subsidy on exports of lint cotton and cotton goods should make for larger exports and be helpful to domestic consumption, but it may be a long time before the United States regains its export trade. By reducing our acreage gradually, we played into the hands of other foreign cotton-growing countries, some increased their acreage, enlarged their exports and gradually captured markets that were formerly dominated by the South. The problem now is to get rid of the huge accumulation of loan cotton in Government hands and take care of the crop now in the making and crops of future years, which may not be easy to accomplish with keen foreign competition to contend with.

This season there is the hope for better markets for American produce and mill and factory output at perhaps better prices. Industry, especially in steel, continues to pick up. American cotton mill stocks are light, European and Oriental port stocks of American cotton are small, and so far no Government loan has been made on this year's cotton crop, and according to late Washington press advises, officials said none would be required by farm legislation unless cotton prices dropped to near the 8-cent-a-pound level.

The first official crop estimate is for 11,412,000 bales which compares with 11,943,000 harvested last year, and is 2,388,000 smaller than the average of the last 10 seasons.

Substance of Government's cotton crop summary for week ended August 13—In the cotton belt temperatures were mostly seasonable, although considerably above normal in northeastern sections. Rainfall was moderate to heavy in the eastern half of the belt but spotted and irregular in the western half. In general progress of the crop continued satisfactory from the Mississippi Valley eastward. While there was some local damage from wind and heavy rain attending the tropical disturbance, harm from this cause was not widespread or serious.

SUPPLY AND DISTRIBUTION OF AMERICAN COTTON SUPPLY
(In Thousands)

	1938-39	1937-38
Visible supply August 1st	6,238	2,644
Orient ports and afloat	107	352
Brought into sight, etc.	(a) 11,684	(b) 15,268
Southern mill stocks	(Dec.) 268	(Inc.) 94
Total supply	17,761	18,358

DISTRIBUTION

	1938-39	1937-38
American mills—North	1,311	1,042
American mills—South	5,964	5,315
Canadian mills, etc.	244	257
Mexican and South American mills, etc.	54	43
Japanese, Chinese and Indian mills	1,030	1,120
European mills, etc.	3,220	4,236
Total mill takings	11,823	12,013

VISIBLE SUPPLY CLOSE OF JULY

In America	5,472	5,048
In Great Britain	183	716
In Continent	189	474
In Japan, China and Indian ports and afloat	94	107

(a) Plus 25,000 decrease in transit.
(b) Plus 20,000 decrease in transit.
(c) Plus 13,000 decrease in transit.

CENSUS REPORT, AUGUST 15

United States—Bales—	This Season	Last Season
Consumption of lint in Cotton Growing States, July	442,000	381,000
Consumption of lint in New England States, July	64,000	55,000
Consumption of lint in All Other States, July	16,000	12,000
Consumption of lint in United States	522,000	448,000
Consumption of lint in Cotton Growing States, 12 months	5,813,000	4,881,000
Consumption of lint in New England States, 12 months	859,000	707,000
Consumption of lint in All Other States, 12 months	188,000	160,000
Consumption of lint in United States, 12 months	6,860,000	5,748,000
Mill stocks, July 31	862,000	1,263,000
Stocks in public storage and warehouses, July 31	11,621,000	9,646,000
Stocks in mills, public storage and warehouses, July 31	12,483,000	10,909,000
Stocks in mills, public storage and warehouses, June 30	12,965,000	11,138,000
Active spindles during July	21,915,000	21,915,000
Active spindles during June	21,788,000	21,143,000

PROCTOR *Rayon* DRYERS

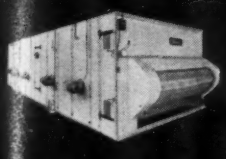
- **FILL EVERY RAYON DRYING NEED**
- **EFFECT IMPORTANT SAVINGS**
- **INSURE HIGH QUALITY RESULTS**

There is an especially designed Proctor Dryer for every stage in producing or processing rayon . . . in cakes, on cylinders, in skeins, staple fibre, rayon waste and rayon piece goods.

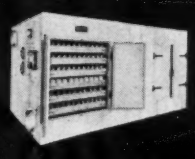
The first rayon dryers in the United States were built by Proctor & Schwartz and today 95% of all rayon manufactured in this country is dried on Proctor Dryers.

Here it is only possible to illustrate and briefly describe some of the various types of Proctor Dryers for rayon, but full information will gladly be supplied on whatever type of dryer is of interest to you.

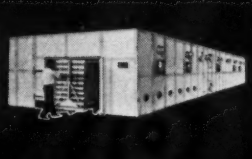
PROCTOR & SCHWARTZ • INC
PHILADELPHIA



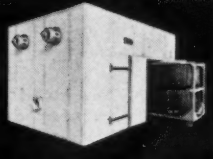
Super Dryer for Raw Stock Saves Floor Space, Steam, Power



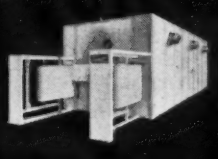
Dryer for Package Dyed Yarn Uniform Drying—Better Results



Dryer for Drying and Conditioning Rayon in Cakes or on Cylinders

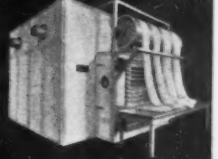


Truck Dryer for Skein Dyed Yarn Motor Drive-Controlled Uniformity



Automatic Skein Yarn Dryer for Producing or Processing Plants

Airlay Dryer for the Tensionless Drying of Piece Goods



Festoon Dryer for Piece Goods (with or without Rolling Girts)

New Textile Equipment and Materials

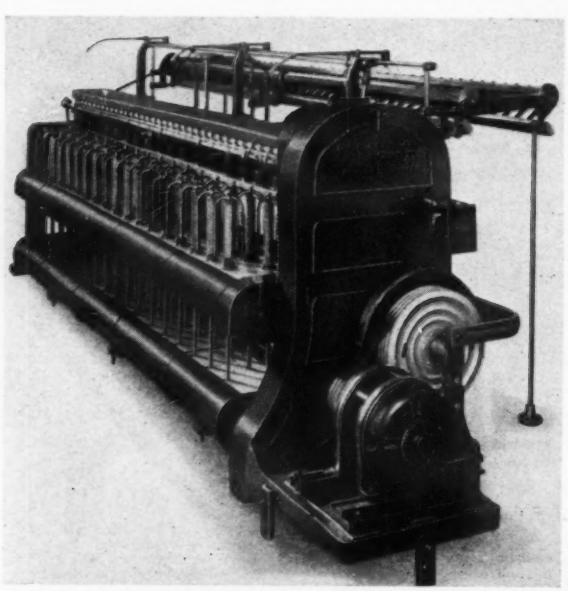
High-Draft Roving Frame

H. & B. American Machine Company, Pawtucket, R. I., has developed a new high-draft roving frame for use on one or two-process roving, drafting drawing frame sliver up to 35 to produce up to 6 hank roving in one operation. To produce finer roving this machine's product goes to conventional 3-roll jacks or fly frames. Several improvements have been made in the new machine:

The new universal head gearing unit is enclosed in an aluminum cover to protect it from lint; it swings back on a hinge. Intermediate draft adjustments can be made without changing the overall draft. All adjusting yokes have retaining bolts easily accessible for gear changes. The roller settings are made by releasing one nut on the adjustable slide and two nuts on the supporting jack shaft yoke. Drive to the compound back roller gears is through roller bearing chain. There is a silent chain drive for the spindle shaft, and an articulated chain drive for the bobbin lifting shaft.

The bevel gear back lifting roll drive is adjustable with a worm drive adjustable traverse motion. It has rustless metal clearer covers with cylindrical front roll clearer, new type horsehead and belt shipper, slotted-type undercleaner to prevent waste entering work, and a re-designed roller stand to permit easy setting of rolls to accommodate all length staples.

The new scroll condenser rod maintains a fixed relation to adjacent rolls with the scroll and rolls being conveniently set as one unit. A new cap bar assembly with nebs retained by Allen setscrews provides a smooth surface for cleaning.

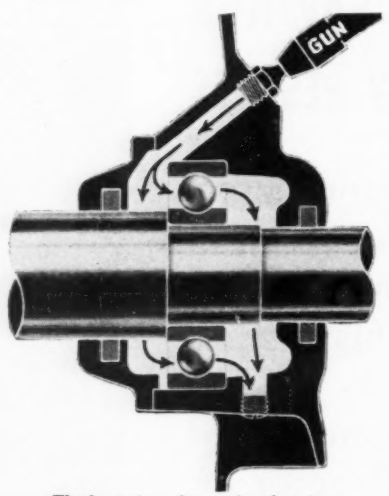


New high-draft roving frame for use on one or two-process roving . . .

◆

Lubriflush System for Motors

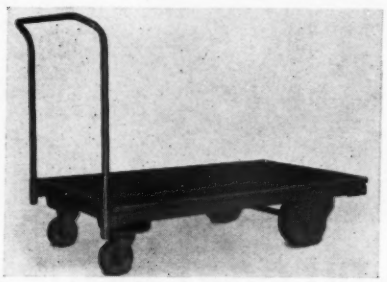
U. S. Electrical Motors, Inc., Los Angeles, Cal., have developed the Lubriflush system of lubricating motor bearings. In some motors there is no provision for the escape of old lubricant and when new lubricant is applied to the bearings it mixes with the old grease. With the Lubriflush system, the new lubricant is injected to the inner side of the bearing with a pressure gun. A drain is placed on the opposite side of the bearing underneath. As new lubricant is injected the old lubricant is forced out of the bearing and before the new lubricant reaches the drain exit it must first flush the entire bearing and chamber. This system eliminates the evil results of sludgy, worn-out lubricant. The Lubriflush system is now being incorporated into all of the company's motors.



Flush system for motor bearing

New Floor Truck

Barrett-Cravens Company, 3255 W. 30th St., Chicago, Ill., has made available a new type of floor truck which has several new design features.



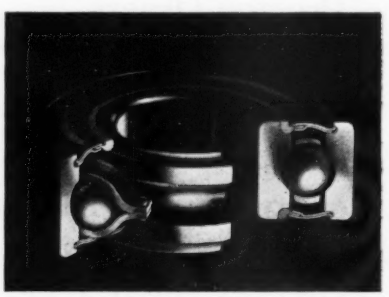
Improved floor truck

There is a hardwood deck bound with high carbon steel angles to prevent splintering and cracking at the edges. The semi-steel wheels are wider than usual width to provide greater bearing area and for protection to the floors. The brackets supporting the push bar can be readily removed to permit installation of a box, rack or shelf type substructure should conversion become desirable. Being of rigid construction throughout, the front wheels are particularly well mounted to provide easy turning and to withstand the stresses of overloading.

◆

New S K F Bearing

S K F Industries, Inc., Philadelphia, Pa., has developed a line of sealed ball bearings along entirely new and simple principles, the seal being one that can be applied to bearings having a standard single row S.A.E. dimension bore, inner and outer race width. This new design has been evolved by departing from the conventional stuffing box type of seal in favor of modern air-cleaner principles sealing against dirt by the felt fiber contact on the polished surfaces of the inner race and by the utilization of the natural tendency of deflected felt to resume its original flat shape. Tests are said to have proven that the new seal retains the bearing lubricant and excludes any dust or dirt entry into the bearing itself, yet the sealing action is so light that the friction drag has been greatly reduced, according to the manufacturer.



Sealed ball bearing

The Crown...

SYMBOL OF SERVICE!

THE SYMBOL of the Crown means more than merchandise... it stands for the *extra* something that the consumer wants and needs... TESTED QUALITY.

For the symbol of Crown Tested Quality can appear only on fabrics or articles containing rayon which have been check-tested and approved on various points of consumer satisfaction by the Better Fabrics Testing Bureau, official analytical laboratory of the National Retail Dry Goods Association.

More than 18 million separate advertising messages are going to continue telling the Crown Tested story to the consumer this fall! Be sure to use Crown Rayon yarns, then your customers' merchandise, having been tested and approved, may bear the symbol of service ... and have the advantage of the plus-publicity of our Crown Tested advertising, by identifying the Rayon fabric with Crown Tested Tags or Labels!*

Crown Tested Rayon Fabrics

*For further information write or call advertising department,

AMERICAN VISCOSE CORPORATION

200 Madison Avenue, New York City

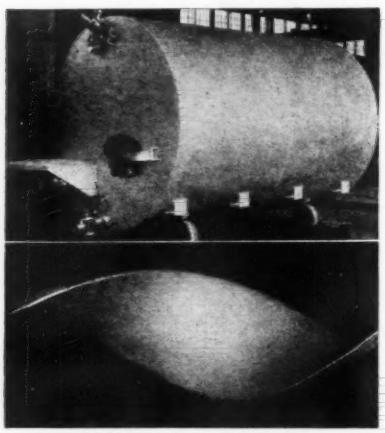
The World's LARGEST Producer of Rayon Yarn

THE FIRST NAME IN RAYON ... THE FIRST IN TESTED QUALITY

Copr. 1939 American Viscose Corporation

Stainless Clad Steel Sheets and Plates by Jessop

Jessop Steel Company, 522 Green Street, Washington, Pa., is now marketing stainless clad steel sheets and plates, known as Silver-Ply, which combine the corrosion resistance of stainless steel with many of the desirable properties of mild steel, according to the company. They are suitable



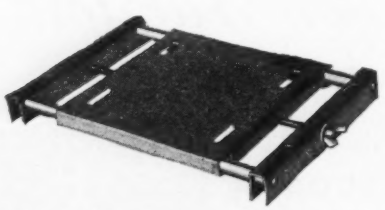
"Silver-ply" storage tank

for storage tanks, cooking vessels, and other equipment used in the textile industry, water works, sewage disposal plants, processing, etc. Silver-Ply may be bent, spun into deep heads, deep drawn, drilled and otherwise worked. It is said to be a good conductor of heat and is not subject to hot spots. The usual sheet or plate of this new material consists of 20 per cent stainless steel and the balance mild steel, ordinarily of flange quality, however, all degrees of cladding from 3 to 50 per cent have been successfully produced.

◆

New Type Motor Base

Ideal Commutator Dresser Company, Park Avenue, Sycamore, Ill., has placed on the market a new low cost motor base called the "Automatic", which maintains correct belt tension



Spring controlled motor base

through the action of special high grade steel springs. This unique design, according to the manufacturer, makes it especially suited to short center drives. One of these bases covers all types of drives, horizontal, vertical, or overhead, and is said to operate satisfactorily with any type of load, pulsating, steady or reversing. To take up slack in belts from normal wear and stretch, it is only necessary to give the adjusting screws a few turns, and the base moves back instantly, giving the correct belt tension. It is steel construction.

◆

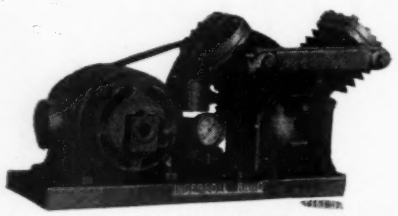
New Chemical Products

Glyco Products Company, Inc., 148 LaFayette St., New York City, have announced that the company now makes methyl oleate and methyl stearate. The materials are insoluble in water and soluble in oils and organic solvents. They may be used as plasticizers for various kinds of coatings, cleaning and polishing compounds, carrier for dyes, softener for leather, rubber, waxes and resins, and varnish removers.

◆

New Compressors

Ingersoll-Rand Company, Phillipsburg, N. J., now has available a new line of industrial compressors and vac-



Finger valve compressor

uum pumps in sizes of from ¾ through 5 h.p., embodying a simplified finger valve construction. Announcement is also made of new paint-spray compressor units which utilize the finger valve construction.

◆

Explosion-Proof Hoist Equipment

Goodrich Electric Company, 2900 N. Oakley Avenue, Chicago, Ill., has provided a new dust-proof lighting fixture with clear glass globe which provides ample protection. It is for use in hazardous locations. It is a one-piece copper hood and may be also fitted with heat-resisting daylight blue, ruby or diffusing globes, as well as the clear globe which is standard. It is approved by the Underwriters Laboratory for use in Class 2, Group G, hazardous locations, and in Class 3 and Class 4 locations where fibers and materials producing combustible particles

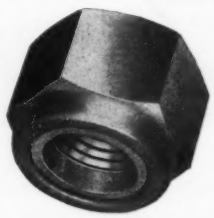
Dust-Proof Fixtures

are manufactured, handled or stored. It is dust-proof, moisture-proof, and weather-proof and is offered in sizes to accommodate lamp sizes from 25 to 150 watts.

◆

Elastic Stop Nuts

Elastic Stop Nut Corporation, 1015 Newark Ave., Elizabeth, N. J., can now furnish its product in any metal



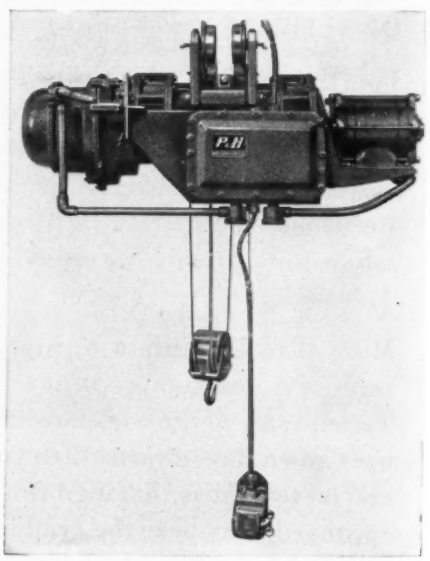
Stop nut

and in any combination of size, style, and thread system. The elastic stop nut incorporates a resilient non-metallic collar which takes up all thread play, thus establishing a constant thread contact which holds the nut in position on the bolt regardless of vibration or wear of surrounding parts.

◆

Hoist Equipped with Explosion-Proof Equipment

The Harnischfeger Corporation, Milwaukee, Wis., manufacturers of P&H electric hoists and electric overhead traveling cranes, has added to its line the P&H explosive-proof electrical



Electrically safe hoist

equipment for hoists. This equipment eliminates the possible hazardous sparking of the hoist and greatly widens the field of hoist application, which is of especial interest to textile concerns. It bears the underwriters' approval for Class I, Group D hazardous locations. Further reducing the possibility of sparking, a flexible cable connection is used, together with spark-proof trolley wheels.

FLASH

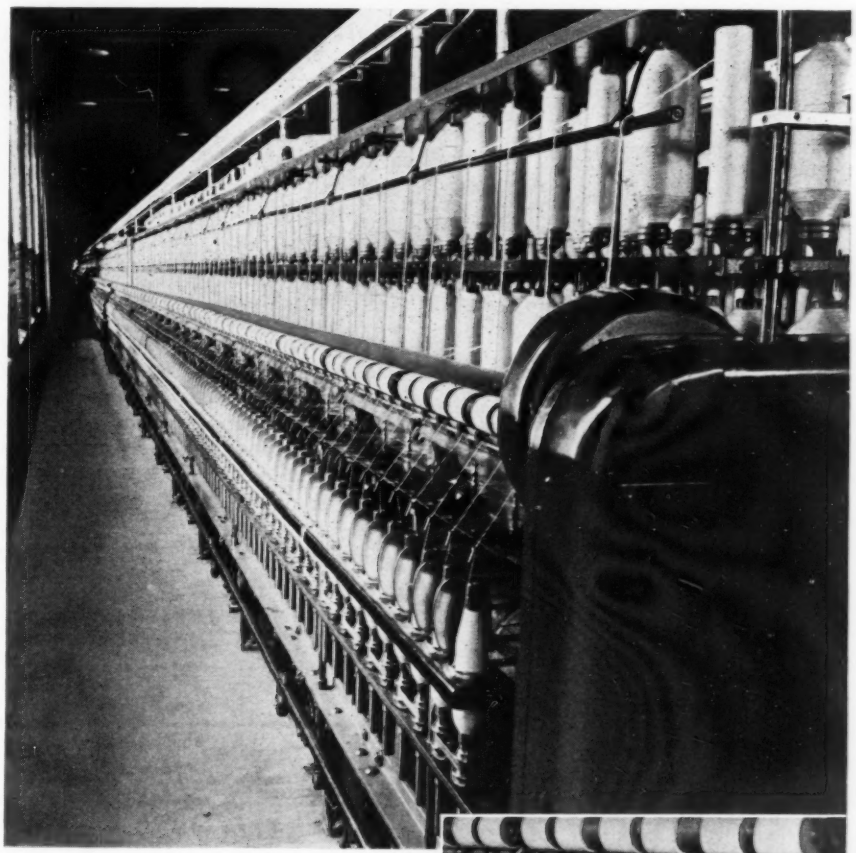
DALLAS MANUFACTURING CO. USES ARMSTRONG'S CORK COTS ON 56 NEW SPINNING FRAMES

IN the up-to-date mill of the Dallas Manufacturing Company, Huntsville, Alabama, Armstrong's Cork Cots have been installed on the top rolls of every one of the 56 new Saco-Lowell Better Draft Spinning Frames. In many other leading mills, too, you'll find these efficient, economical cork roll coverings.

In this new installation there's a profit lesson for *every* yarn manufacturer. For actual use* proves that Armstrong's Cork Cots give better running work . . . fewer top roll laps . . . less end breakage. Mill superintendents who use these cots know that they turn out a more uniform product, too, and that they eliminate eyebrows almost entirely. Furthermore, there's much less clearer waste.

BUT—these better cots cost no more than your old roll coverings! And savings start right away, because of their faster, cheaper assembly. Finally, your savings will mount steadily as time goes by, because Armstrong's Cork Cots last longer—and can be renewed *three or four times* by rebuffing, at a cost of about ½¢ per roll!

YOUR MILL can improve its yarn quality and cut production costs if you install Armstrong's *Extra Cushion* Seamless Cork Cots. Let an Armstrong representative show you actual production figures of mills spinning your range of numbers on cork. Or write Armstrong Cork Co., Industrial Div., Textile Products Section, 923 Arch St., Lancaster, Pa.



ABOVE: *One of the new Saco-Lowell Better Draft Spinning Frames—featuring the newly-designed needle-bearing top rolls, which are sealed to prevent leakage of the lubricant. This improvement is a guarantee against dry rolls and uneven work.*

RIGHT: *A close-up, showing the newly-designed spindle and paper bobbin.*

~ ~ ~

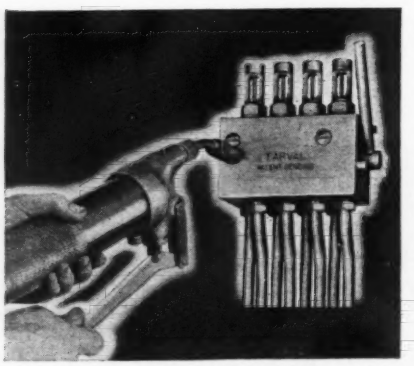
*Today, more than 7,000,000 active spindles are equipped with Armstrong's *Extra Cushion* Seamless Cork Cots.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

Lubricate Many Bearings From One Inlet

The Farval Corporation, Cleveland, Ohio, has developed a new system for lubricating small machines or a few bearings on larger machines from a single grease inlet. It is called the



For quick greasing

DX multiple measuring valve and combines a single inlet port with 2 to 8 outlets per block. As many valve blocks as may be needed to lubricate all bearings on a machine can be installed and connected in series. Positive pressure lubrication of every bearing is accomplished by connecting a conventional type of hand or power grease gun to the grease nipple at the inlet port. In one position of the rotary valve handle at the right side of the block, the valve pistons are moved by pressure built up by the gun, delivering lubricant to bearings through one set of valve outlets. When the valve handle is turned to the opposite position, lubricant pressure moves the valve pistons in the opposite direction to deliver lubricant to the other set of outlets. The amount of lubricant delivered is individually adjustable and not a bearing is missed, according to the maker.

◆

The Model J-3 Roving Frame

Saco-Lowell Shops, 60 Batterymarch Street, Boston, Mass., has further improved its line of controlled draft roving frames, the improvements being designed into a new frame termed the Model J-3. The program of improvement includes refinement of the fiber control function of the forming trumpet, devising a source of roll pressure that is uniform in action, and arranging the entire drafting assembly to reduce cleaning. The new frame is entirely equipped with a new design of Torrington needle-bearing top rolls, built around an unusually hardened steel arbor, which serves also as inner race of the needle-bearing assembly. The bearings are sealed against leakage of lubricant, and therefore require fewer lubrication periods; grease is used.

The arbor supporting the bearing assembly is stationary and the motion of the top rolls is synchronized with that of the bottom steel rolls so that layers of fibers in the center of the strand keep their normal position. Steel rolls have been redesigned to secure balance and symmetrical pressure on each strand of sliver to attain the maximum amount of fiber grip and fiber control. Spacing of rolls has been arranged to prevent the creeping of oil from the bearings to the bosses.

On the Model J-3 the Saco-Lowell Uniset pressure system, which employs spring pressure instead of weights, is furnished as standard equipment. The cap bars are cleverly designed to facilitate cleaning, setting, and maintenance. The cap bar blocks are made in units, which are adjustable. The bars are so designed that they may be wiped at the same time the block is cleaned.

Forming trumpets are mounted on an oversized machined steel bar which serves as a rigid and steady support; the cam traverse motion imparts a uniform reciprocating motion to the trumpets and sliver guides. As a convenience to fixers the trumpet is fastened on top by a screw.

Several combinations of clearers are available in order to meet a large range of operating conditions. In designing the draft gearing brackets and stands the clamping bolts were made very accessible. The creel will be the Uniflex.

The Model J-3 has the G-38 cone, spur gear compound, chain drive for spindles and bobbins, and steel flyers.

◆

High-Speed Bookkeeping Machine

Burroughs Adding Machine Company, Detroit, Mich., has announced a new high-speed bookkeeping machine especially designed to post an original ledger and original statement, prove the figures on both records, and provide a journal—all in a single operation. On this machine, which performs the foregoing functions, the peak caused by transferring balances in a separate operation at the end of the month is leveled, as the balances may be transferred during the regular posting run.

◆

New Brown Instruments

The Brown Instrument Company, Philadelphia, Pa., has placed on the market an entirely new and improved line of temperature and pressure recorders, indicators and controllers. The streamlined instruments have a special safety link between actuating element and pen, which provides an overload safeguard protecting the mechanism from damage if the pen is moved in either direction manually. The chart is secured to driving mechanism by tapered stud and tapered chart positioning stud, eliminating chart knob and chain. A friction clutch permits manual rotation for chart setting.

Book Reviews

"Rayon and Staple Fiber Handbook"

The third edition of the well-known *Rayon and Staple Fiber Handbook* has been made available by the Rayon Handbook Company, 303-305 Fifth Avenue, New York City. It has been revised and brought up to date, and contains much practical material helpful to the mill producing rayon goods. Two new chapters have been added on the manufacture of rayon staple fiber and spun rayon yarns, and contained also is a glossary of rayon terms. The authors of the book are H. R. Mauersberger and E. W. K. Schwarz. As a whole the book serves as a well-illustrated reference work on all phases of rayon production, manufacture and use for the entire textile trade as well as for the student, economist and consumer of rayons. The size is 5½x7¾ inches, sells for $4.50 in the U. S. and Canada, and $5.75 in foreign countries. Total of 832 pages, 22 chapters, 300 illustrations, tables, and charts.

"Industrial Market Data Book"

A new handbook, said to be the first of its kind ever published, called the *Industrial Market Data Handbook* has been made available by the Department of Commerce at Washington. It contains vital information for establishing new sales territories, production quotas and marketing campaigns. Complete figures are given on industrial production, employment, value of products, cost of material, fuel and power, and output per wage earner for each of the counties in the United States, and similar data for every city of more than 10,000 population. The figures in the handbook pertain to 1935, the latest year in which information in this form is available. The handbook was prepared as a cooperative study by the Bureau of Foreign and Domestic Commerce, the Census Bureau, and the Bureau of Mines. It may be secured from the Superintendent of Documents, Washington, D. C, or from any district office of the Bureau of Foreign and Domestic Commerce for $2.50 per copy.

QUALITY *and* ECONOMY *go together*

CAST IN S.A.E. 67

Copper . . 78%
Tin 7%
Lead . . . 15%

in Johnson *Leaded Bronze* ELECTRIC MOTOR BEARINGS

● The purchase price of a bearing is no indication of its quality . . . nor can it indicate an economy even when that price is low. The installation cost of a finished bearing is practically the same — regardless of the brand. The true index to your cost is the *frequency* of installation.

Johnson gives you economy by giving you quality . . . and quality in bronze bearings is a matter of alloy. It's the long, trouble-free hours of smooth operation that pays real dividends.

Johnson Electric Motor Bearings are cast in S.A.E. 67 — an alloy especially designed for this type of service. The high lead content — 15% — provides conformability, compensation for misalignment and prevents galling or freezing to the shaft. The ratio of Copper to Tin provides the required strength, resistance to pounding and resistance to wear.

Every Johnson bearing is correct in design and tolerance. The oil holes, grooves and slots fit in with the lubrication method of the motor. In most cases, the bearings will slip right into the housing and over the shaft with little or no additional work. Complete stocks in every principal industrial center provides immediate service. Why not try a Johnson Bearing on your next job? Convince yourself that here is your greatest value in Electric Motor Bearings.

Write for a copy of our latest catalogue. Completely illustrated—it lists and describes the largest line of bearings on the market. No obligation.

The MOST COMPLETE SLEEVE BEARING SERVICE in the world

JOHNSON BRONZE COMPANY

Sleeve BEARING HEADQUARTERS

530 SOUTH MILL STREET • NEW CASTLE, PA.

"Patents and the Public Interest"

A new book of interest to textile inventors is *Patents and the Public Interest* by H. A. Toulmin, Jr. It is a factual survey of the United States patent system, the good in it and the bad that ought to be out of it. Public officials, patent attorneys, engineers, and inventors are provided with an authoritative discussion of current patent problems and constructive suggestions for easing and improving the role of both the inventor and the system to which he looks for protection and reward.

"Symposium on Wage and Hour Law"

A critical treatment of the principal problems arising under the Wage and Hour law appears in the summer issue of *Law and Contemporary Problems*, the quarterly of the Duke University School of Law, Durham, N. C. In twelve articles and 170 pages, questions concerning legal interpretation and the economic effect of the act are fully discussed. Separate articles are devoted to the child labor provision of the act and to the work of the industry committees. Copies of the quarterly may be secured for 75 cents each.

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Bang District Sales Manager of Link-Belt Stoker Division

L. M. Bang, who formerly was connected with the Whiting Corporation, and who has been identified with the stoker industry for a number of years, has been appointed district sales manager in the central-western stoker division of Link-Belt Company, 307 N. Michigan Avenue, Chicago, Ill.

◆

News of Atwood

Theodore Dewhurst has been appointed sales manager of the Atwood Machine Company, Stonington, Conn., succeeding A. L. Lewis, who has recently assumed the position of chief engineer of the company. Mr. Dewhurst formerly was manager of sales in metropolitan New York and throughout the Middle West and Canada. Mr. Lewis, in his new position, will be able to combine his mechanical engineering ability and experience with his wide knowledge of customer requirements gained as sales manager of the company for a number of years. Atwood will discontinue the New York office and that territory will be covered by John Breen under the direction of Mr. Dewhurst, Mr. Breen's office remaining at Wilkes-Barre, Pa.

◆

Dunn Secretary of Raybestos-Manhattan

William H. Dunn, comptroller and assistant treasurer of Raybestos-Manhattan, Inc., has been elected secretary of the corporation succeeding the late Morton F. Judd, general manager of The Raybestos Division of Bridgeport and Stratford, Conn. Mr. Dunn is also a director and treasurer of the Manhattan Securities Company, which operates rubber plantations in Java.

Cahill Resigns After 20 Years with G & K

Announcement has been made of the resignation, after 20 years of service, of Walter P. Cahill, general superintendent and a member of the board of directors of Graton & Knight Company, Worcester, Mass.

◆

Oberly Represents Royce in Middle West

Louis A. Oberly, who formerly was identified with the Hart & Harrington Company, Chicago, has become representative in the Middle West for the Royce Chemical Company, Carlton Hill, N. J., manufacturers of chemicals and soluble oils for the textile, tanning, and cosmetic industries. His headquarters will be in Chicago. Mr. Oberly is a graduate chemist of the Missouri School of Mines and has supplemented this training by advanced courses in Washington University and Chicago University.

◆

Anderson of Whitney Chain Opens Office

J. W. Anderson, Dallas (Tex.) representative of the Whitney Chain & Manufacturing Company, who has previously operated from his home, has now opened an office at 902 Allen Building, Dallas, Tex.

◆

Changes in Hercules Powder Organization

W. Ernest Henry, superintendent at Hercules Powder Company's chemical cotton plant, Hopewell, Va., has assumed the duties formerly carried out by Luke H. Sperry, manager, who has been appointed chief engineer of Hercules Powder Company, with headquarters at Wilmington, Del. Mr. Sperry succeeds George E. Ramer.

National Adhesives Corp. Now National Starch Products, Inc.; Acquire Piel Bros. Starch Co.

National Adhesives Corporation announce a change of name to National Starch Products, Inc. The headquarters are 820 Greenwich St., New York City. Simultaneously, the company announces the purchase of the Piel Bros. Starch Co., of Indianapolis, to be operated as a division of National Starch Products, Inc.

◆

Williard E. Smith Joins Borne Scrymser Company

Williard E. Smith, of New Brunswick, N. J., has joined the laboratory staff of the Borne Scrymser Company at Elizabeth, N. J. Mr. Smith was graduated this year from Rutgers University, where he majored in organic chemistry. Under the direction of Dr. E. H. Schmidt, he will assist in the development of the company's textile specialties and condensation products.

◆

Jordan Announces New Company

L. K. Jordan, well known throughout the textile industry, has announced the operations of the new Jordan Manufacturing Company, of which he is president. The company, with headquarters at Monticello, Ga., is specializing in bobbins of all types, spools, skewers, cones, etc. Associated with Mr. Jordan are experienced bobbin makers who have spent many years in the business.

◆

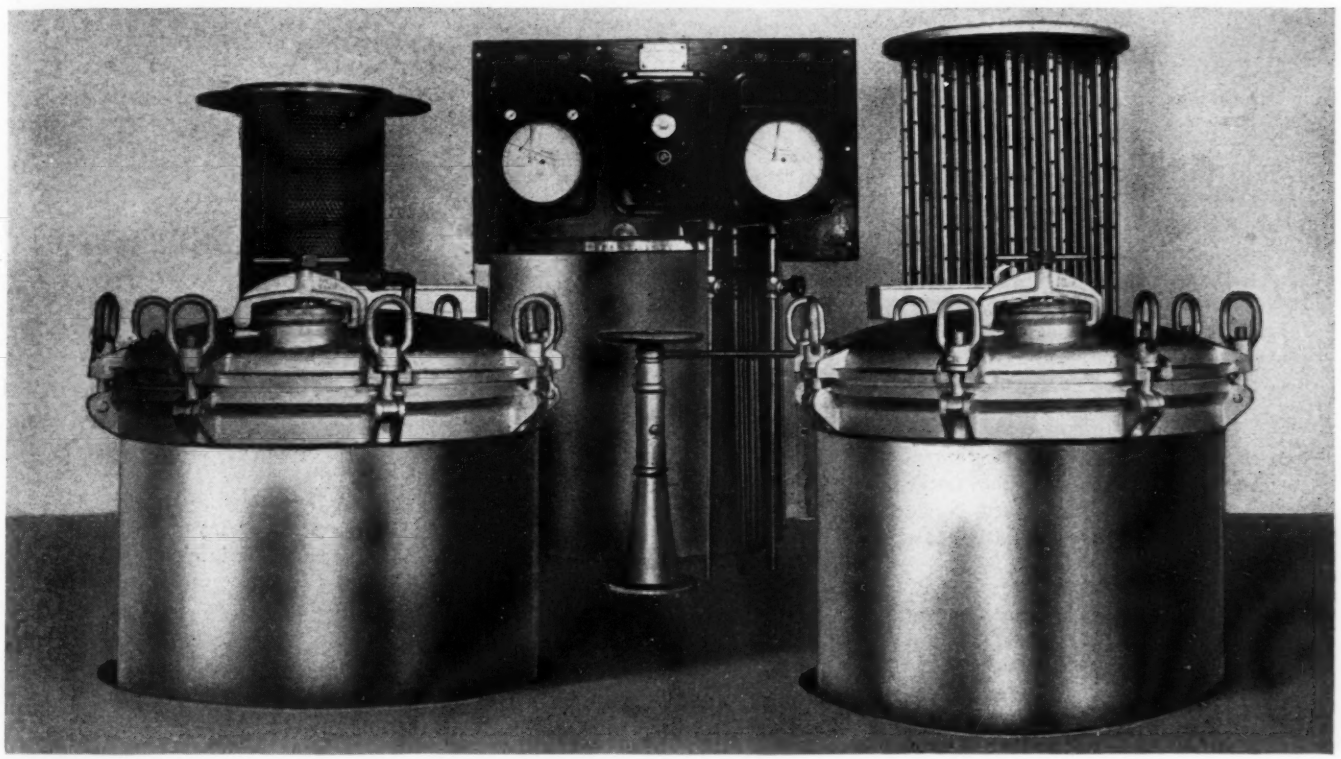
Spun Rayon Warp Sizing Research To be Conducted at N. C. State

W. D. Appel, chairman of the research council of the U. S. Institute for Textile Research has announced the selection of the textile school of North Carolina State College, Raleigh, as the place for conducting the new research project on the warp sizing of spun rayon and cotton-spun rayon warps. The committee to administer the research project are Carl R. Harris, the Erwin Cotton Mills Company, Durham, N. C.; Dr. W. E. Yelland, who was research director of the Institute's previous warp sizing research; and Dr. Thomas Nelson, dean of the textile school of N. C. State College. It is expected that this intensive research project will contribute basic and practical knowledge of efficient warp sizing that will prove valuable to the textile industry. In order to facilitate the work of the Institute, the textile school has purchased from the Cocker Machine & Foundry Company one of their newest rayon slashers and it will be installed in the new textile building so that work on the research project can begin shortly after October first.

GASTON COUNTY DYEING MACHINE COMPANY

Builders of all types of "Pressure" Dyeing Machines

STANLEY **NORTH CAROLINA**



Typical set-up of 2-kier Stainless Steel Combination "Pressure Type" Beam and Package Dyeing Machines with full automatic control.

MACHINES are available in stainless steel or nickel iron for the dyeing of beams or packages wound on 5/8" and 1 5/8" tubes or springs and Barber-Colman cheeses. Machines can be furnished in single or multiple kier set-ups as desired.

Capacities ranging from 1 pound to 1000 pounds

We also build stainless steel and nickel iron machines for **"Package" dyeing** only. These machines can be set directly on working floor requiring no basement room for pumping system.

Vacuum Extracting Machines
Rapid "Blower Type" Drying Machines
Oven Type Package Dryers
Dye Beams and Yarn Carriers
Beam Winding Machines
Beam and Package Bleaching Machines
Auxiliary Equipment for Dye Houses
Sample Dyeing Machines
Hot Waxing Attachments for Thread Yarns
Emulsion Attachments for Knitting Yarns

PERSONAL NOTES
about Men You Know

W. P. Dunson, formerly superintendent and general superintendent at Callaway Mills, LaGrange, Ga., has become production manager at The American Thread Company, Dalton, Ga., where JULIAN M. LONGLEY is agent.

B. W. BINGHAM, who for a number of years was general overseer of carding at the Brookside Mills, Knoxville, Tenn., but who more recently was superintendent of the Virginia Mills, Swepsonville, N. C., has returned to the Brookside Mills as general overseer of carding. While at Brookside several years ago he was instrumental in starting the Tennessee Division of the Southern Textile Association.

W. L. STEELE, JR., formerly secretary-treasurer and manager of the Locke Cotton Mills Company, Concord, N. C., has become manager of the Riverdale Plant, Enoree Mills, Enoree, S. C.

W. E. FLOYD, formerly superintendent of the Goodyear Decatur Mills, Decatur, Ala., has been transferred to the same position at the Atco, Ga., plant. C. W. YOUNG, formerly superintendent of the Goodyear Fabric Corporation, Devon Mills, New Bedford, Mass., succeeds Mr. Floyd at Decatur.

JOHN E. SMITH, formerly with Mills Mill, Woodruff, S. C., is now assistant superintendent at Laurens (S.C.) Cotton Mills. In the July issue of COTTON, it was incorrectly reported that Mr. Smith was formerly with Marshall Field & Co., Spray, N. C.

L. G. Moss, formerly with Marshall Field & Co., Spray, N. C., is now assistant superintendent of the Victor-Monaghan Company, Greenville, S. C.

STUART W. CRAMER, SR., formerly president of the Cramerton (N.C.) Mills, Inc., has become chairman of the board. He is succeeded as president by his son, STUART W. CRAMER, JR., formerly treasurer, who in turn is succeeded by his brother GEORGE B. CRAMER. W. B. MOORE is assistant treasurer and A. L. MCARTHUR, JR., is secretary of this company.

LEWIS M. CARPENTER has become associated with the fine and fancy goods department of Southeastern Cottons, Inc., as mill technician. Mr. Carpenter is president of the Kinston (N.C.) Textile Mills, Inc.

• Captain Ellison A. Smyth, 92, one of the true pioneers of the southern textile industry, has announced his retirement; his grandson, Ellison A. Smyth, III, succeeding him as president of the Balfour (N.C.) Mills, which the Captain built some years ago, upon leaving Pelzer, where for decades he was a titan in the industry. During even the most recent months of his connection with the mill, Captain Smyth retained actively his interest in its affairs and in the industry. His retirement ends one of the most fruitful and dramatic careers in southern industrial history . . . . . .

Abner Nash, who for the past seven years has been assistant secretary and treasurer of the Alexander Manufacturing Company, Forest City, N. C., has assumed the position of production manager of the Spartan Mills, Spartanburg, S. C.; the Gaffney (S. C.) Manufacturing Company; and the Startex Mills, Tucapau, S. C. Before his departure from Forest City, Mr. Nash was presented a gold watch by the employees of the mill as a token of the high esteem the employees held for him. Rodgers Dayvault, formerly connected with the treasurer's office of the Cannon Mills Company, has succeeded Mr. Nash.

• This photograph shows Howard C. McKenna, superintendent of the New Braunfels (Texas) Textile Mills, with a 550-pound sea bass which he caught in August off the coast near Galveston, Texas. Walter Dillard, Jr., manager of the mill, states "this huge fish was caught with the small line shown on the rod which Mac is holding."

L. C. FINLEY has been made superintendent of the Pilot Mills Company, Raleigh, N. C., succeeding J. V. MCCOMBS, who is now associated with the Quaker Chemical Products Company.

J. M. GAYLE has become superintendent of the Rose Fabrics, Inc., Normandy, N. C., succeeding J. L. SHERRILL.

HOWARD DERRICKSON, formerly superintendent of the Blackstone (Mass.) Mill, has become superintendent of the Baltic (Conn.) Mill. He is a graduate of Lowell Textile Institute.

B. S. PEARSON, Charlotte, N. C., has been made superintendent of the Martinsville (Va.) Cotton Mills Company.

OTIS WILLIAMS, who has been overseer of twisting and slashing at the Dallas (Tex.) Cotton Mills Company, has been promoted to the superintendency of this plant, succeeding H. BARD.

J. L. ADAMS, formerly connected with the Whitney (S.C.) Manufacturing Company, has become superintendent of the Gaffney (S.C.) Manufacturing Company.

EDWIN M. ROCK has been appointed sales manager of the rayon gray goods department of the Riverside & Dan River Cotton Mills, Danville, Va.

MAURICE HOLT has resigned from J. W. Valentine Company to become associated with the Erlanger (N.C.) Cotton Mills Company to serve in the sales and service department and to act as stylist for spun rayons.

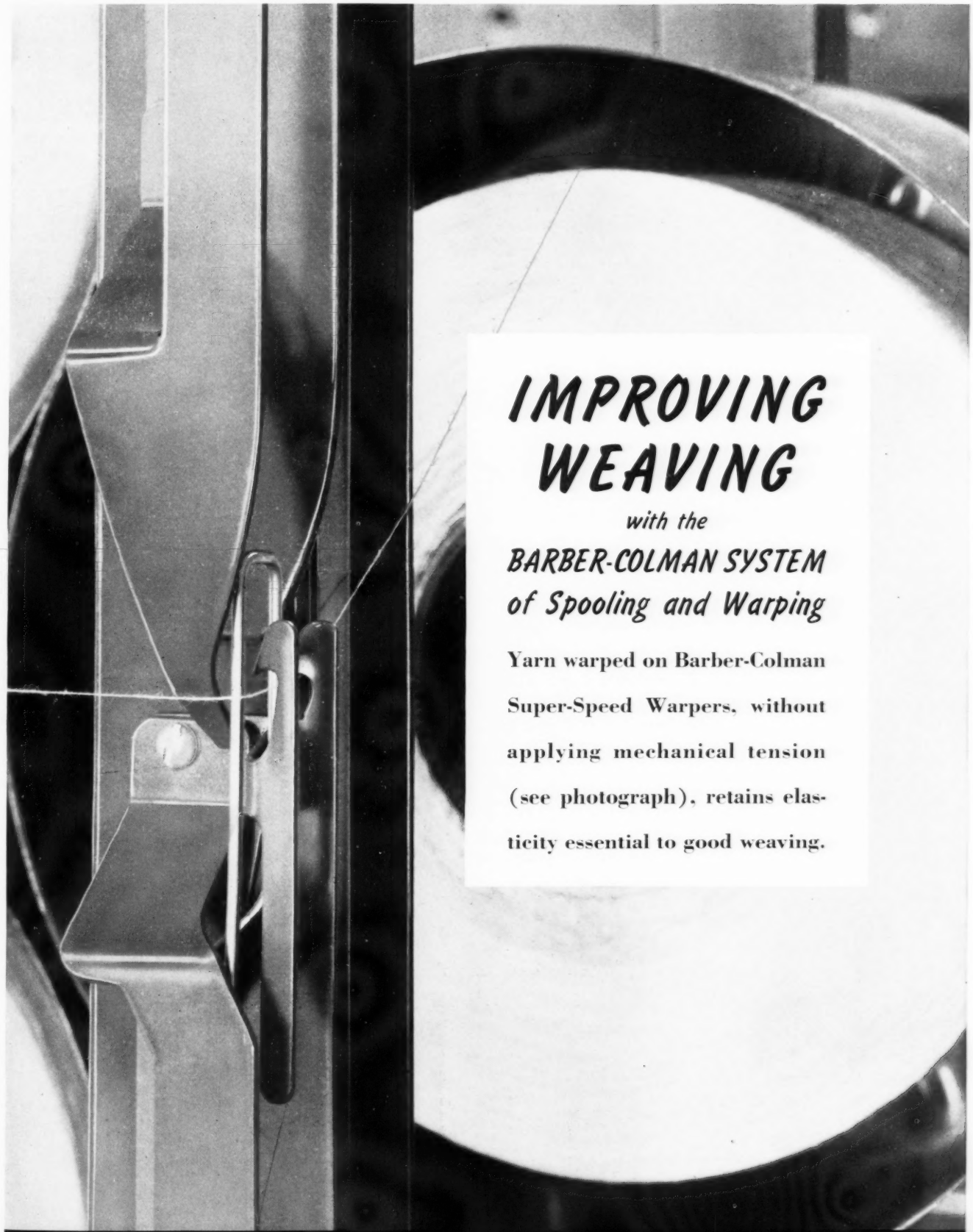
J. H. WARLICK has been promoted from assistant superintendent to superintendent of the Double Shoals Cotton Mills and the Falls Manufacturing Company, Granite Falls, N. C.

EVERETT BORDEN has become superintendent of finishing at the Plymouth Finishing Company, Fall River, Mass., where he will assist in further developing new finishes for the dress, underwear, and negligee trades. He formerly was connected with the Mount Hope Finishing Company, the Farr Alpaca Co., and the Beaunit Corporation.

S. L. STACKS has resigned as general superintendent of the Jefferson Mills, with plants at Jefferson, Crawford, and Royston, Ga., to become associated with C. L. Upchurch & Sons, Athens, Ga., machinery dealers. HANS BARD, formerly superintendent of the Dallas (Texas) Cotton Mills, has succeeded Mr. Stacks as general superintendent of the Jefferson Mills.

E. J. WEIL, former sales manager of the Van Raalte Co., has become vice-president in charge of sales and distribution at the Archer Hosiery Mills, Columbus, Ga.

(Additional personals and obituary notices will be found on page 134.)



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with the

BARBER-COLMAN SYSTEM of Spooling and Warping

Yarn warped on Barber-Colman Super-Speed Warpers, without applying mechanical tension (see photograph), retains elasticity essential to good weaving.

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Spectacular

Spectacular developments are the order of the day . . A "flying fortress" crosses the continent in less than ten hours . . A new yarn is developed from coal, air and water . . But in the background of industry and science, a hundred unspectacular improvements are brought to light daily—without which many of the spectacular achievements could never be. SONOCO'S progress is like that —unspectacular—but important nevertheless to the progress of the whole.

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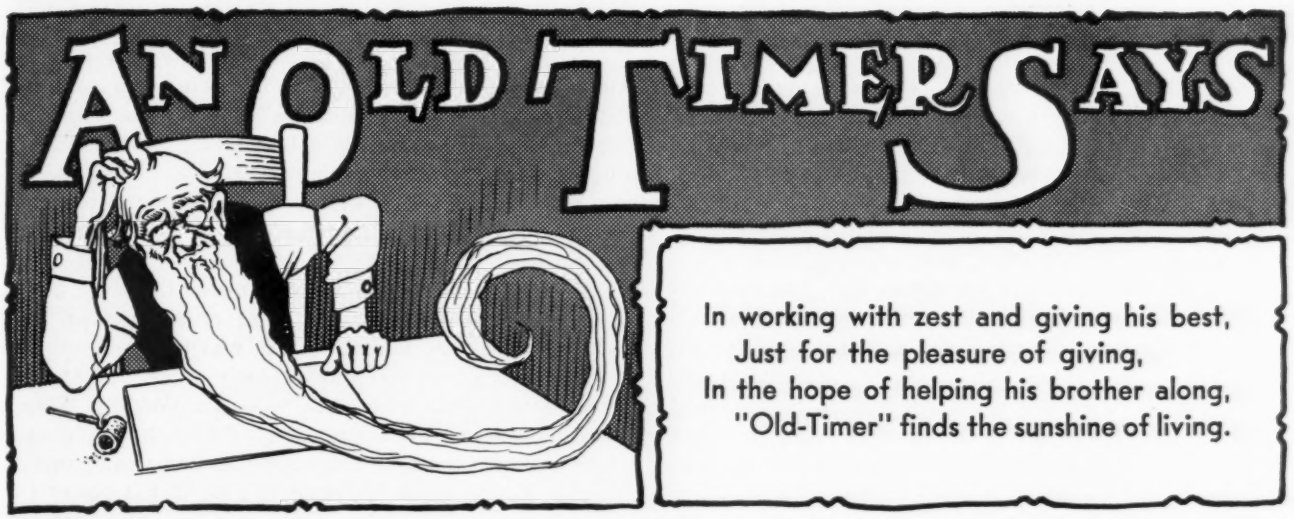

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

IMAGINATION AND PROGRESS

(Part 2) Continuing Old-Timer's review of "Pilgrim's Progress---

In the August issue, OLD-TIMER *began a review of the famous old book, "Pilgrim's Progress", and in a most interesting fashion, applied its teachings in a practical way to present-day textile operating executives. The accompanying installment continues this discussion. It would be advisable to read the August installment first, and then pick up the story:*

Now, to go on with our story, Bunyan says:

"As I walked through the wilderness of this world, I lighted on a certain place where was a den, and laid me down in that place to sleep; and, as I slept, I dreamed a dream."

Bunyan starts the account of Pilgrim's Progress with the foregoing statement, and then proceeds to tell us what he saw in that dream. Continuing, he says:

"I dreamed, and behold I saw a man clothed with rags, standing in a certain place, with his face from his own house, a book in his hand, and a great burden upon his back, * * * and as he read he wept and trembled; and, not being able longer to contain, he brake out with a lamentable cry, saying, 'What shall I do?' "

Then the writer explains that after considerable thought the man finally decided to inform his wife and children of his dream, whereupon they thought he was crazy; "that some frenzy of distemper had got into his head; "that they tried to comfort him but he got worse and worse, and that after trying devious ways to get his people to see his way of thinking the man finally decided to go away, to start on the journey to the great city, the city that he could see in his dream. It is on this long journey that he gives us all of the experiences with which the average man meets in his journey through life on this earth, and those experiences—those experiences as related 300 years ago, in a time when there was no machinery, no modes of fast transportation, no telephone, no radio, no nothing, (as the slang expression goes) but still the experiences of man's relation to man, which, according to OLD-TIMER'S impression, are comparable to those same relations now. This is what makes the story interesting. And now, suppose we follow on with Bunyan in his dream. Suppose you, reader, try to get some of the same impressions received by OLD-TIMER, noticing, as we go along that Bunyan employs the unique method of personalizing the characteristics, positions, etc., of those with whom he comes in contact. We, ourselves, often personalize positions, such as Mr. Overseer, Mr. Superintendent and sometimes we speak of Mr. Hard Luck, Mr. Optimist, etc. Bunyan speaks of the first man Christian met on his journey as a man named Evangelist. This character was probably suggested to his mind by some minister who had made a good impression upon his mind as being a wise and good man, one anxious to help pilgrims in their quest for a better life.

The traveler soon meets up with a man named Evangelist, who offers to direct him and who points out to him the way; he is anxious to be of service to this man, offering his own experience for the benefit of the beginner. This, OLD-TIMER believes, is analogous to an experienced overseer saying to a textile graduate: "I'll help you by giving you the benefit of my own practical experience." Often the beginner will gladly reciprocate by teaching the practical man calculations, etc., which he learned in college; therefore, the profit is mutual. Comparable with Christian, however, the young textile man has many trials, and there are numerous pitfalls before him. He is going to meet with much opposition in the form of just plain hard work, as well as many temptations, temptations that will strain his powers of resistance almost to the breaking point.

Christian proceeds to seek information from Mr. Evangelist. Many young men who enter the textile

business seek information and direction from their overseers or superintendents.

After Pilgrim explained to Mr. Evangelist his plight, stating that he wanted information as to how to proceed in his quest of the goal he had determined upon reaching, Evangelist not only gave him verbal advice, but he also gave him a parchment roll, or a book of instructions to follow. In a somewhat similar way many overseers and superintendents tell young men that they should study text books, textile magazines, and textile courses while they are getting practical experience through their work in the mill.

When Christian started on his journey the neighbors came out to see him. "Some mocked, others threatened, and some cried after him to return; and among those that did so there were two that resolved to fetch him back by force. The name of the one was Obstinate, and the name of the other Pliable."

Here is almost a parallel to the temptations with which a young textile man is confronted when he has made up his mind to study at night, when along comes several of his pals to ask that he join them at the pool room or the drug store, the movies, or some other place of amusement, making fun of him if he refuses.

We now hear Christian saying, "I cannot go so fast as I would, by reason of this burden that is on my back."

"Now, I saw in my dream, that just as they had ended this talk, they drew nigh to a very miry slough, that was in the midst of the plain; and they, being heedless, did both fall suddenly into the bog. The name of the slough was Despond. Here, therefore, they wallowed for a time, being grievously bedaubed with the dirt; and Christian, because of the burden that was on his back, began to sink into the mire.

"Then Pliable said, 'Ah! neighbor Christian, where are you now?'

" 'Truly,' said Christian, 'I do not know'.

"At this Pliable began to be offended, and angrily said to his fellow, 'Is this the happiness you have told me all this while of? If we have such ill speed at our first setting out, what may we expect between this and our journey's end? May I get out again with my life, you shall possess the brave country alone for me.' And with that, he gave a desperate struggle or two, and got out of the mire on that side of the slough which was next to his own house: so away he went, and Christian saw him no more.

"Wherefore Christian was left to tumble in the Slough of Despond alone; but still he endeavored to struggle to that side of the slough which was farthest from his own house, and next to the wicket gate; the which he did, but could not get out because of the burden that was upon his back; but I beheld in my dream, that a man came to him whose name was Help, and asked him what he did there.

" 'Sir', said Christian, 'I was bid to go this way by a man called Evangelist, who directed me also to yonder gate, that I might escape the wrath to come; and as I was going there, I fell in here.'

" 'But why did you not look for the steps?'

" 'Fear followed me so hard, that I fled the next way, and fell in'," Christian replied.

Now, fellows, can you begin to see the similarity of Bunyan's reasoning to some advice you have given to young men who were entering the textile business?

"Now I saw in my dream, that by this time Pliable was got home to his house. So his neighbors came to visit him; and some of them called him wise man for coming back, and some called him a fool for hazarding himself with Christian; others again did mock at his cowardliness, saying, 'Surely since you began to venture, I would not have been so base to have given out for a few difficulties' * * *

"Now as Christian was walking solitary by himself, he espied one afar off come crossing over the field to meet him; and their hap was to meet just as they were crossing the way of each other. The gentleman's name that met him was Mr. Worldly Wiseman: he dwelt in the town Carnal Policy, a very great town, and also hard by from whence Christian came."

This Mr. Worldly Wiseman did all in his power to show Christian that his efforts were useless, that he had started all wrong, anyway. He not only referred to the trouble already experienced by Christian, such as falling into the Slough of Despond, but pointed out that he had not seen anything yet in comparison to the many obstacles he would meet with later on.

How's that talk compared with the many smart guys you and I meet with these days.

"Then he went on 'till he came to the house of the Interpreter, where he knocked at the door, when a man came and asked who was there.

" 'Sir, here is a traveler who was bid by an acquaintance of the good man of this house to call here for his profit; I would therefore speak with the master of the house.'

"So he called for the master of the house, who, after a little time, came to Christian and asked him what he would have.

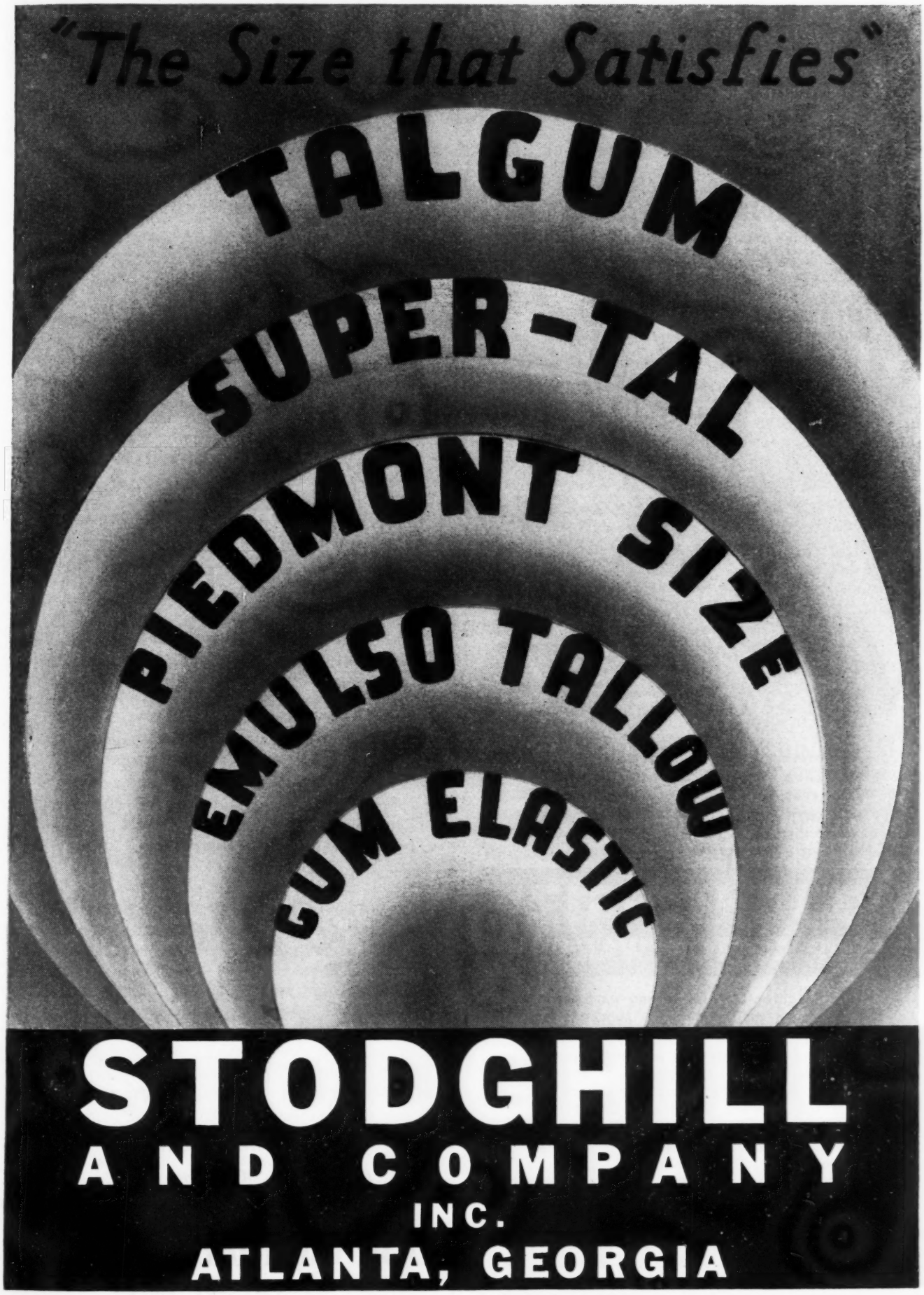
" 'Sir,' said Christian, 'I am a man that am come from the City of Destruction, and am going to Mount Zion; and I was told by the man that stands at the gate at the head of this way, that, if I called here, you would show me excellent things, such as would be helpful to me in my journey'.

"Then," said the Interpreter, 'Come in; I will show thee that which will be profitable to thee.' * * *

"I saw moreover in my dream, that the Interpreter took him by the hand, and had him into a little room where sat two little children, each one in his own chair. The name of the eldest was Passion, and the name of the other Patience. Passion seemed to be much discontented, but Patience was very quiet. Then Christian asked, 'What is the reason of the discontent of Passion?' The Interpreter answered, 'The governor of them would have him stay for his best things till the beginning of next year; but he will have all now. Patience is willing to wait.' "

Then Bunyan goes on in his dream to show by logical reasoning the value of patience, and no doubt many of our readers will remember several OLD-TIMER articles dealing with patience. In fact, one of the hardest things for any young man to learn, he thinks, is patience; also, many experienced men fail to realize how necessary it is to have patience in many phases of their work.

(To be continued)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FOR COTTON WARPS

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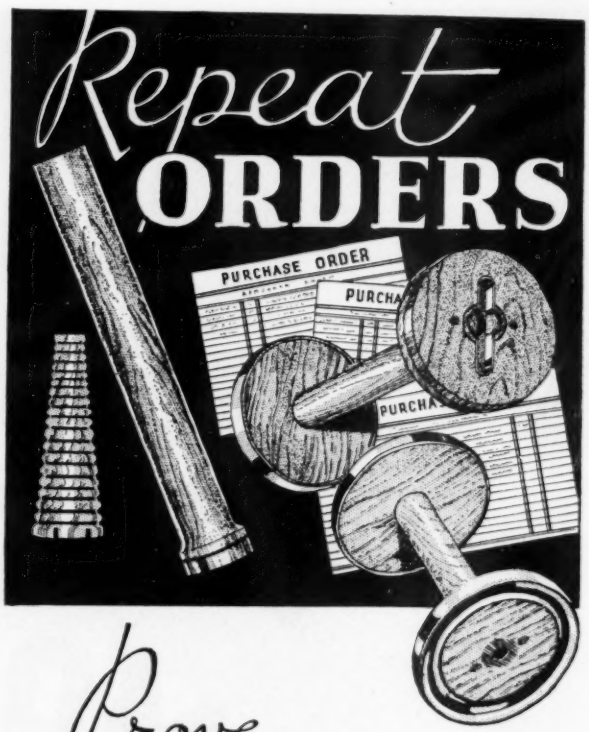

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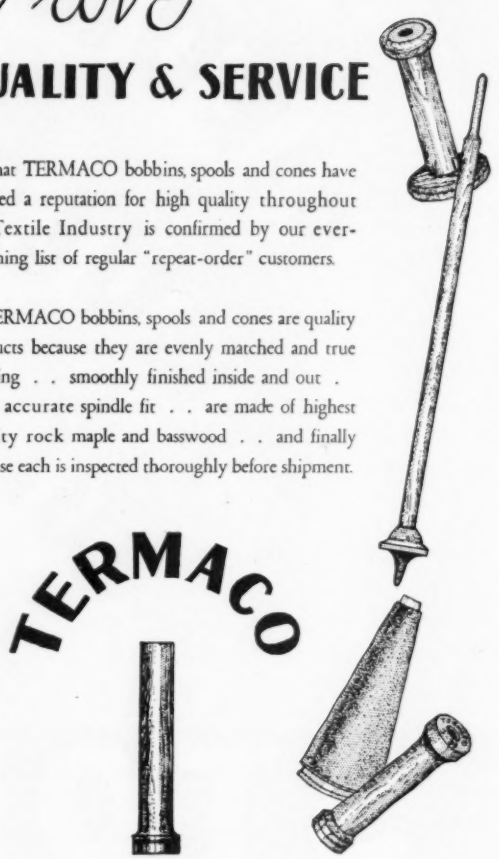
TERMACO bobbins, spools and cones are quality products because they are evenly matched and true running . . smoothly finished inside and out . . have accurate spindle fit . . are made of highest quality rock maple and basswood . . and finally because each is inspected thoroughly before shipment.



Send your next inquiry for Textile Wood Parts to

The Terrell Machine Co., Inc.
Charlotte, N. C.

HOW OTHER MEN MANAGE

Foreign Matter in Cloth— (A Practical Mill Problem)

ANOTHER EXAMPLE of the service offered by COTTON as the clearing house for practical mill problems is revealed in the following letter received from a mill executive.

"We have been experiencing some trouble from black specks which remain in certain of our cloth after it has been bleached and finished. We are enclosing a few swatches which illustrate the trouble. You will notice that these black spots almost invariably occur in the yarn along with a "thick place". This indicates to us very definitely that the foreign matter gets in the yarn not later than the spinning process as the thick place is certainly the result of imperfect drafting. The spots occur about equally in warp and filling. We have no synthetic rolls in our spinning room. We are using an oil spray in our stock at present, but these specks were prevalent before we began this practice, so we cannot attribute the specks to the use of this oil. We have had different ideas ourselves as to the possible cause of this trouble, but so far have not been able to locate it. We have thought of belt dressing, black oil, tar, and even foreign matter in the cotton itself and have taken steps to eliminate each one of these possibilities. The spots still appear in the cloth."

COTTON, without revealing the identity of the mill having this trouble, sent samples of the swatches to other mills, bleacheries, and chemists, and requested an opinion as to the type of foreign matter and the possible cause of it. One of these replied as follows:

"We have examined the fabric containing the small black speck, and in our opinion this spot was woven into the fabric and not removed by the kier boil. It contains a small amount of iron, but consists principally of some oily or tarry organic matter which is ether soluble. It might be removed by spot washing or by scouring, red oiling, and caustic pressure boiling, repeated if necessary. We are returning the swatch which shows how ether has spread the stain."

The next man was of the opposite opinion and made the following diagnosis:

"We believe that these specks are not in the gray cloth, but get into the fabric after the finishing process between the water mangle and the starch mangle. Close observation shows that the starch is over these spots in certain places. The smear of the speck indicates that it might be tar."

Ivar Moberg presented an analysis and made the following statement:

"In my opinion the black speck is caused by dirty waste being spun into the yarn in the spinning.

"Examining the sample piece under the microscope revealed a black speck in the filling only, without any staining of the adjacent warp threads, proving that the speck must have been on the filling before it was woven into the cloth. It would be almost impossible that this speck could get onto the filling after it was woven into the cloth without any staining, whatsoever, of the warp threads crossing it.

"The cloth was further cut into and the pick containing the black speck was carefully removed; no staining of the warp threads appeared under the microscope. Further examination of the removed filling showed a coarse place at the location of the black speck in the filling. The black speck did not penetrate the filling, and was, therefore, not visible on the opposite side of the yarn.

"Carefully untwisting the filling, I removed a small bunch of waste with extremely short fibers upon which was the black speck. The bunch of waste containing the black speck had stained the adjacent fibers, which proves that the stain was of a wet, or semi-wet nature at the time it got onto the yarn. Hence, the staining of adjacent fibers. However, at the time I examined the speck, it was quite dry and had a hard crust around it.

"In view of what the examination disclosed, it is logical to assume that a small bunch of waste containing black grease, or oil, got onto the yarn in the spinning process and was spun into the yarn. Of course, a black grease, or oil, stain should disappear in the bleaching process, or at least turn into a light yellow stain. However, if a long time elapsed between the spinning and bleaching processes, the stain probably dried up completely, or formed a hard protecting crust, through which the bleaching chemicals could not penetrate. It is extremely difficult, if at all possible, to remove in bleaching any stain or dried grease or oil.

"There is only one other possibility that I can think of which may cause a stain of this nature, and that is iron dust getting onto the cloth through the perforation in the take-up roll covering. If the covering is put on the roll loosely, there will be a friction between the covering and the iron roll which will produce minute particles of iron dust, which may come through the perforation, particularly when the loom bangs off and jars the roll. However, it would be an extremely rare coincidence that this happened right on a bunch of waste spun into the filling."

"Cotton" serves as the clearing house for many practical problems. Should you send in one, please be certain to give all manufacturing details that may have a bearing on the problem.

Making Slub Filling

THE FOLLOWING QUESTION appeared on page 99 of the November issue of COTTON, and so that the readers may follow closely the answers to it, the question is again repeated:

"I am interested and would be indeed grateful for any information your readers could furnish regarding the making of slub filling on a spinning frame. I have done some experimental work along this line with a motion that jumps the back and middle roll ahead, thereby making a bunch between the front and second roll. The middle rolls are unweighted and the break draft is 1.08. The roving is regular twist and the yarn is spun reverse. The results obtained have not been very satisfactory as the bunch is lacking in twist and is very weak and pulls apart very easily.

"It occurred to me that in the spinning of reverse twist slub filling there might be some advantage in the use of reverse twist roving instead of regular twist. It seems to me that this should help to make the bunch stronger than it would be with the regular twist in the roving. Have any experiments ever been made along these lines? If so, what results were obtained?

"I understand that sometimes slub filling is made by having the back and middle roll running constantly and stopping the front roll for a second or two to make the slub. Have the readers any information on just how this can be done and how this could be effected on a Mason frame?

"Any comments on making this type of filling with reference to break, drafts, weighting or unweighting the middle rolls, the type of twist necessary in the roving, and particularly about the making of slubs by stopping the front rolls will be most welcome."

CONTRIBUTOR No. 6727

EDITOR COTTON:

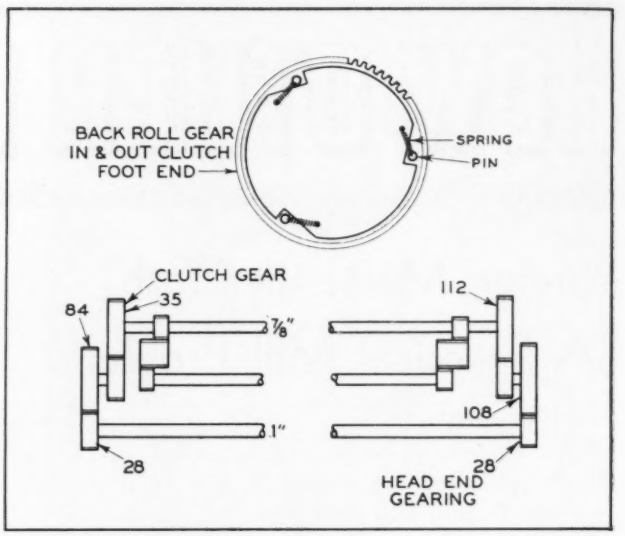
Evidently "CONTRIBUTOR No. 6727" is trying to run his slub filling from short stock, which causes a weak place to set itself at the end of each slub; this can be overcome by using 1 1/16-inch or longer staple. His break draft of 1.08 is also a little low, but not by a great amount.

Reverse twisted roving might be an advantage, but if I understand it correctly, the break draft should remove almost all of the twist that has been inserted in the roving, and the extra expense of converting a roving frame into reverse twist mechanism would be rather large for the benefit derived from its use. I have made roving for reverse twisted yarn, and it was not necessary to change the direction of the twist in the roving.

Regarding the motion that might be used in stopping the front roll and allowing the middle and back rolls to continue could only be done with missing teeth in the intermediate twist gear on the spinning frame. This would also cause the lay and take-up motion to hesitate at the same time. The problem in this case would be how long would these gears last with this surge being placed on the first tooth when starting the stopped gears. In this case there would have to be some arrangement made to drive the back and middle rolls directly from the cylinder gear.

There are instances where this slub is begun on the roving frame by using a sprocket method of driving the middle and back rolls from the top cone shaft with an *in* and *out* motion that drives them at different speeds at timed intervals. Of course, this would have to be adapted to the local conditions.

The most practicable method is by using two constants in this functioning of the middle and back roll speeds, one to be at one end of the rolls and one at the other end. In this case it would be of highest import that every roll neck be perfect and all gears tightly keyed to remove any possible back lash that might exist. The accompanying drawing might be some help



in deciphering this arrangement. Two constants being used, one for the fine work, and another for the slub, a clutch would force the other out when the proper space had been passed over. These constants should run at a ratio of about 4 to 1. In fact, the constants as figured by the accompanying drawing of the chain of gears are 493.71 and 120.

CONTRIBUTOR No. 6731

EDITOR COTTON:

In answer to "CONTRIBUTOR No. 6727" who is asking for information concerning slub filling, I can't see that it will make any difference what frame is used unless it has the rolls driven from both ends of the frame. I have made these yarns with the equipment made up of gears, and also by a clutch in the crown gear. I prefer the clutch in the crown gear arrangement and the middle and back rolls moving ahead.

I don't see how the slub yarn could be made with the front roll stopping because this would throw the twist all at one place.

The middle roll should be weighted because these rolls move up together. If necessary, spread the middle roll back from the front. I would increase the break draft from 1.08 to about 1.12 as this will break the twist in the roving better. The roving should be twisted with a 1.20 multiple, but I am unable to see where changing from regular twist roving to reverse twist roving will help as the twist in the roving is lost before leaving the front roll, it coming from the front roll like a ribbon.

The size of the roving will naturally be governed by the size of the slub wanted. If a large slub is desired it is a proposition to make a slub strong enough to pull itself. I have made slub yarns where I ran an end of fine soft twisted yarn through a guide just between the middle and front roll, allowing the end of yarn to go between the top and bottom front rolls, which we called a lead line; it strengthened the slub.

It is necessary to sacrifice production in making slub yarns and I find that I get best results by reducing the speed of the machine 30 or 40 per cent of that for the same count on regular yarns.

At the present I am making 15.50 slub filling from 4.00 hank roving with the slub 1½ inches in length

and 21 and 24 inches apart, using 3.95 as a twist multiple.

CONTRIBUTOR No. 6732

EDITOR COTTON:

Replying to "CONTRIBUTOR No. 6727" who has asked about making slub filling, I have had no experience with such novelty yarns but my reactions to his question are that I don't think the direction of the twist in the roving matters. The stopping of the front roll on a spinning frame means that all of the ends will come down and I don't believe he can work out his arrangement by this method. Twist naturally runs to the thin places and leaves a slub soft. Perhaps an end of yarn could be introduced into his work, running it only through the front roller and thus adding a core for strength.

CONTRIBUTOR No. 6733

EDITOR COTTON:

Although we cannot offer any perfected set-up for "CONTRIBUTOR No. 6727" to make slub filling, or venture to say definitely just what his trouble is in making this yarn, we will offer a few pointers that may be somewhat useful to him.

1. A weighted middle roll will give better results than the unweighted roll.
2. The break draft should be the same as would be used to make plain yarn of the same count with the weighted middle roll.
3. It is advisable to have twist in the roving and twist in the yarn in the same direction.
4. Put in two or three more teeth of twist over that which would be used for plain yarn of the same count.
5. All back lash must be removed from both the draft and twist gearings. Gears together on the same stud should be pinned together.
6. Comparatively slow speed will give better results than high speed. The writer once made 30s slub filling with a front roll speed of 88 r.p.m.
7. Run the heaviest traveler possible.
8. Top rolls should be in good condition, there being no ridges or worn places in them.

CONTRIBUTOR No. 6734

Girls at Southern Brighton Mills Model in Style Show

All dresses in show are made from Southern Brighton fabrics, which the girls helped to manufacture . . .

These girls shown in the pictures below are employees of the Southern Brighton Mills, Shannon, Ga., and as can be seen they not only know how to make the fabric that goes into clothes, but they can wear it with poise. These pictures were made at the recent style show held under the sponsorship of the Southern Brighton Mills, interest in which was wide spread and participated in by leading merchants of Atlanta and other Georgia towns. More than 3,000 people attended the style show. Judges were three well-known Atlanta stylists.

The show, which was combined with a popularity contest, proved to be a stimulating civic undertaking.

Every dress worn in the contest was made of a Southern Brighton fabric; this plant produces high-grade specialties of cotton and cotton-rayon blends, flax, and wool. The garments included a range from active sports costumes to full dress evening gowns; slacks and shirts, play suits, tailored suits, tea dresses, and formal frocks, some of which are shown here.

First prize was won by Miss Kathleen Weber, who expertly showed a two-piece ensemble in brown and gold, a basket weave of viscose and acetate rayon for the dress.

Snapshots made during the recent style show at Southern Brighton Mills, Shannon, Georgia . . . .

Card Fillet

THE FOLLOWING QUESTION was received by the editors of COTTON: "Recently we put in several cards equipped with No. 110 fillet on the cylinders and No. 120 fillet on the doffers and flats. As our old cards are equipped with No. 100 and No. 110 fillets, we would like to gradually replace the fine wire with the wire which we have on. Naturally in replacing this wire we will have cards running with No. 100 wire on cylinders and No. 120 on doffers and flats. Other cards will have No. 110 on the cylinder and No. 110 on the flats and doffers. Will this materially affect the carding ability of these cards?"

This question was sent to several men who replied as follows:

First Answer: This question is quite out of the ordinary in that no question is raised as to the setting of the cards. While we have had no actual experience in making the change this man is planning, we do not believe that the carding ability of his cards will be materially affected. The main thing, as we see it, is to keep the cards in good condition, that is, sharp and properly set, even though the fillet is soon to be removed, and in this way we think he can gradually make the change without experiencing any serious difficulty.

Second Answer: We doubt if the mill will see any difference due to the fact that they are now combining No. 100 wire cylinders with No. 120 on the doffers and flats. It is possible to push a little more production through with coarser counts, and that may be what this mill has in mind. The No. 120 doffers and flats will not stand up quite as long under the higher production as the coarser counts. They will give slightly better work as there are more points to the square foot and they will remove more nep. There is no reason in the world why this combination will not card properly.

Third Answer: This man will get better results on No. 110 wire on the cylinder and No. 120 wire on the doffer and flats. He will get better carding, but naturally the wire will not stand the load as long and as well as the heavier wire. This is better than the No. 100 on the cylinder and the No. 110 on the doffer and flats. There should be 10 points difference in the wire on the cylinder and the wire on the doffer and flats, with the doffer and flats having the finer wire.

Ends Down Test Form

By James N. Jones

Pepperell Manufacturing Company, Opelika, Ala.

ALTHOUGH IT HAD SERVED WELL during its day, the old spinning ends down test form is found to be inadequate. It "just grew" and developed by itself. With credit to the proper source, the form shown accompanying this article was developed from the old form, and while the new form is not perfect, it has advantages over the old form, and it is a step toward better records and more accurate information on spinning ends down tests.

In the heading of the new form more data are listed, making identification of tests run several years previous more positive. "Ends Down per Hank" has been added (number of ends down divided by hanks run). This appears to be a good comparison—in some ways better than ends down per thousand spindle hours.

In the body of the form, the causes for ends coming down are grouped so that the individual causes may be quickly found. On the old form the causes were written haphazardly and could not be readily located. The groups are: roving and creel, drafting assembly, spindle and ring assembly, outside causes, caused by other ends, and unknown and/or unclassified causes. There may be better ways to group them; others may group them differently, but at least they are grouped, and the person making the test has no trouble locating the individual causes; likewise, the interpretation of the test is easier.

The knowledge that ends are breaking at a certain position on the bobbin is valuable information and leads to the division of the test form into three parts; the bottom quarter, the middle half, and the top quarter of the bobbin. Others may possibly divide it into more or less parts, or divide it into equal parts, however, three parts are enough in most cases, and since an end breaking above the one-quarter mark is nearer the middle than the bottom, the quarter, half, and quarter divisions are logical. This division applies only to filling wind; mills using

P161

Date
Avg. % R. H.
Weather
Time Run
Hours Run
No. Spindles
No. Spindle Hours
Frame No.
Make and Type Frm.
Ends Down per Hank
Ends Down/1000 Spdl. Hrs.

SPINNING END BREAKAGE

OTHER DATA

Checked By

Yarn No.
Kind
Actual No.
Avg. Skein Break Lbs.
H. R. Fed
Traveler
Ring Flange
Bobbin
T. M. T. G.
Front Roll R. P. M.
Cyl. R. P. M.

CAUSES	BOBBIN									TOTAL
	TOP			MIDDLE			BOTTOM			
	Taper			Taper			Taper			
	Top	Middle	Bottom	Top	Middle	Bottom	Top	Middle	Bottom	
Roving Run Out										
Roving Broken Back										
Singling										
Bad Roving										
Hard End										
Total Roving & Creel										
Lint in Trumpet										
Roving Outside Trumpet										
Top Roll Bad										
Top Roll Lap										
Steel Roll Lap										
Lint on Rolls										
Top Clearer Waste										
Total Drafting Assembly										
Mechanically Bad Spindle										
Traveler Worn										
Traveler Off										
Lint on Traveler										
Bad Bobbin										
Bobbin Riding High										
Total Spindle & Ring										
Broken in Cleaning										
Broken by Spinner										
Flying Lint										
Bad Piece-Up										
Total Outside Causes										
Ends Whipping										
Adjacent Top Roll Lap										
Adjacent Steel Roll Lap										
Scavenger Roll Lap										
Top Clearer Waste										
Total By Other Ends										
Unknown										
GRAND TOTAL										

Total Taper-Top Mid. Bottom Total Bobbin-Top Mid. Bottom

warp wind or combination wind may ignore or use the division. By marking one or more bobbins with paint rings and using them on the frames under test, the person making the test can tell instantly when the quarter marks are past, and entries may be started in the next division.

On the old test form only "Unclassified Ends Down" were grouped according to the position on the taper. Information based on this might easily be misleading, therefore, each of the three columns on the form dividing the bobbin into three parts is likewise divided into three parts. In this way, every end coming down can be located according to its position on the taper as well as its position on the bobbin. This information is complete, and ends down that have no relation to taper position can be ignored.

The individual causes listed in each group are selected after studying past records and eliminating the unusual and rare causes. One or two extra lines under each group of causes will take care of these unusual causes. Some mills need several other causes listed among the usual or frequent. For instance, mills using bands instead of tapes need a heading "Band Slack" in the spindle and ring assembly group.

Notice that "Top Clearer Waste" is listed in two places. This cause, coming in the group "Ends Down Caused by Other Ends" takes into consideration the revolving top clearer lap that tears down adjacent ends. Of course, mills that do not have revolving top clearers do not need this cause on their form.

The "Total" column is divided into two parts to avoid confusion; the individual causes can be listed in one part and the group totals in the other.

Modern Methods of Dyeing

(Continued from page 64.)

Pigment padding is done with unreduced vat dyestuff. We may use the finer pastes or the micro powders and are not limited to pale shades, but may make deep shades, which will have very good penetration when finished. When the goods are padded with the pigment color, they are batched on a shell at once and then reduced in a bath of caustic, hydro and salt on a jig; the rest of the operation is the same as jig dyeing.

From the success of pigment padding, the use of pigment dyestuff has extended to dyeing in package machines, either for yarns and beams or even to the circulating type raw stock dyeing machines. As delicate shades of vat dyes in the reduced state are likely to be taken up quickly by the outside of the lot and leave the inside bare of color, it has been found that a highly dispersed vat dye may be circulated evenly before it is reduced and then when the caustic and hydro are circulated to reduce the dye and fix it, the results are very much more even than by the older method. The success of this process depends on the dispersion of the dyestuff; any ordinary dyestuff paste will not give good results, but the micro powders are probably the best for the purpose.

Beats per Inch on Pickers

A brief history of the subject "beats per inch" on pickers . . . . . .

EDITOR COTTON:

"CONTRIBUTOR NO. 6791" has asked for more discussion on the subject of beats per inch on pickers in his question on page 98 of the March issue. His own set-up is with the use of Middling cotton, 1 1/32-inch for warp and 1-inch for filling. His machines have two beaters; the first is a 3-blade beater, and the size of the feed roll at this beater is 2½ inches. The second or finisher beater is a Kirschner and the feed roll there is 2⅞-inch in diameter. At present his blows per inch are: breaker, 23.98; finisher, 43.67.

It was along about 1916 that we began to take notice of beats per inch on our pickers. During the term of F. Gordon Cobb as president of the Southern Textile Association the problem of light-quick carding was one of the chief discussions at the meetings. The story goes that Cobb got his idea about reducing the pounds put through per hour from a Mr. Mills who had started up a mill in India. Mr. Mills was a machinery erector for Saco-Lowell Shops and after the machinery layout had been determined for that mill and shipped to India, the owner of the mill decided to make a different style of goods than he originally planned. Mr. Mills saw that he would have more cards than necessary to run the mill on this new style of goods and after thinking the matter over, he decided it would probably be difficult to explain to the owner of the mill why part of the new cards were standing idle while all the other machinery was in operation. Mr. Mills reasoned that the man in India would think the company had sold him too many cards. So, he simply cut the production on the cards and ran all of them. He was then agreeably surprised to see how clean the stock was and how much better the breaking strength was than he had expected.

Mr. Mills explained all of this to Cobb, then president of the STA, and Cobb in turn persuaded a number of the mills to make tests for the STA. The results were so gratifying that the superintendents and overseers began to realize all of us were working our stock too much. A natural result of this card experience turned our attention to beats per inch on pickers and it was found that most mills were beating the stock too much on the pickers and numerous tests were made to determine the beats per inch, with both blade and carding beaters, which would give maximum breaking strength and maximum cleaning. Of course, it is understood that breaking strength and cleaning are affected oppositely—that is, increasing the beats per inch will give better cleaning but will decrease breaking strength, whereas less beats per inch will increase breaking strength and lower the cleaning. Therefore, each mill must be governed by its local conditions.

If the mill is using clean cotton and the product,

either cloth or yarn, is as clean as desired, then the thing to do is to reduce beats per inch, back off the feed roll settings and licker-in settings on the cards, and do all the other things to increase breaking strength, because in so doing, nothing is hurt as long as the product is as clean as the trade calls for.

However, if the cotton buyer should switch to real trashy cotton, the settings should be changed promptly to avoid too much trash in the finished product.

This little history of the beats per inch and light-quick carding answers "CONTRIBUTOR No. 6791" as to why he has heard so little discussion on the subject. In other words, overseers and superintendents have thrashed the matter out and most of them have made exhaustive tests to determine what is the best practice for a particular plant on different grades of cotton.

Just for the information to be passed along to "CONTRIBUTOR No. 6701", back in 1916 when we started investigating beats per inch, some mills had 3-process picking and the total beats per inch in the process were more than three times as much as the total beats per inch are now on single-process picking. We found some finisher beaters on pickers were making 70 beats per inch, believe it or not. Such extreme cases were usually the result of reducing the speed of the feed roll simply to cut the production—with no one giving consideration to the number of beats per inch on the stock.

If "CONTRIBUTOR No. 6791" is not getting the desired results from his picker settings and beater speeds and breaking strength, I suggest that he make a test on a few of his machines by checking the card grinder's settings, use the grinder fillets just half as long, see that the licker-in fillet is sharp, and back off the licker-in setting another 5/1000-inch. Then have new trumpets in the card coiler heads and in the deliveries of the drawing, and have them the correct size. Set the spinning rolls just so they will not cockle the yarn and run the fly frame rolls just close enough so that lumpy roving will not be made—of course, having good rolls on both frames. Have a minimum of stretch at the slasher and see that the yarn from the slasher contains at the very least, one per cent more moisture than is in the raw yarn, 2 per cent will be better. There should also be one per cent more moisture in the roving and spun yarn than there is in the raw stock. Do not wind on the loom beam too tight. He can set up a few cards, a few drawing frames, a slubber, fly frame, and spinning frame as described in the foregoing without having to change over the entire mill. He then has a test being run. I am sure that the breaking strength of the yarn will be improved if he does this, then he can change over the other machines if he finds that the work will pay for itself.

From the settings that "CONTRIBUTOR No. 6791" is using, I think he should be getting satisfactory work. But the settings for all mills cannot be the same. His total beats per inch of 67.65 is not high and if he should desire better cleaning, he could possibly increase his beats per inch without decreasing his breaking strength.

This contributor has asked for fan speeds. As far as I know, there is no definite rule for fan speeds, local conditions having much to do with this factor. The area of the dust room in comparison to the amount of air all the fans are discharging into it will be different at different mills. The area of dust chimney from the dust house can affect the fan speeds, etc.

Some time ago I read an article by OLD-TIMER called "A Mill Within a Mill". I suggest that "CONTRIBUTOR No. 6791" read this article again. [Page 99, August 1937 COTTON.] C. O. B.

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

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"Taking Care of Anti-Friction Bearings"

ON PAGE 67 of the August issue of COTTON there appeared an article entitled "Taking Care of Anti-Friction Bearings". The prelude to the article explained that the information was a collection of information from various anti-friction bearing manufacturers on the lubrication of their equipment, condensed and written especially for the practical man in the textile mill.

The editors of COTTON now have the following addition to this excellent article, sent by the author too late for publication in the August issue:

The best way to set a greasing schedule is to inspect bearings when a new job is getting started and add grease when you see it is needed. Don't open all the bearings but pick out an average bearing of each kind and do all your looking on this one bearing. Then only one bearing has a chance to get dirty.

A bearing ought to go four to six weeks between greasings, and if more greasing is needed then the grease is wrong, the housing leaks, or there is some other special condition involved.

In one large plant that has good luck with bearings, spinning frame motors running two shifts are greased once a year opening and picking machinery bearings two and four times a year, depending on the speed and housing tightness; Sanforizer, dry can, and other hot bearings require from every four weeks to three months, depending on the circumstances.

The author goes on to explain that the article was written especially for the man in the mill, and says with reference to his own plant: "Last week I checked some spinning motor bearings and some Sanforizer bearings that have been on the foregoing schedule—the spinning motors for three years, and the bearing condition is satisfactory."

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What the Southern Mills are Doing

Rock Hill (S.C.) Printing & Finishing Company has requested the city to enlarge the waterworks system in order to supply one million additional gallons of water per day, to take care of an expansion program that is being planned.

This company has installed a modern loop dryer in the new rayon department, manufactured by the Philadelphia Drying Machinery Company, and sold through F. W. Warrington Company, Charlotte, N. C.

The Piedmont (Ala.) Plant of the Standard-Coosa-Thatcher Company, Chattanooga, Tenn., is engaged in a modernization program in which old spinning frames are being replaced with new long draft spinning and individual motors are being installed on the new spinning. The plant will also replace the old master switchboard.

Talladega (Ala.) Cotton Factory has installed a Prudential group policy life insurance program, to which 109 employees are eligible. The policy involves a total of $61,000 and is of the contributory type, the employees themselves paying a part of the premium and the remainder of the expense being assumed by the employing company.

J. C. Sanders has purchased the Mobile (Ala.) Mill of the Aponaug Manufacturing Company. He has formed a new company to manage the property and sell its product. The mill will now be known as the J. C. Sanders Cotton Mill Co., Inc., and headquarters will be at Mobile.

Hickory (N.C.) Dyeing and Winding Company, Inc., has completed a new plant which will manufacture double-resist acetate rayon yarn for the hosiery, bedspread and tapestry industries. It is a two-story building 40x80 feet.

The equipment of the Ada McLean Mills, Lumberton, N. C., which has not been in operation for some time, has been bought by C. L. Upchurch & Sons, Athens, Ga., a textile machinery concern.

It is understood that 27 acres of land in Orange County, Va., have been purchased by John A. Balsam, Brooklyn, N. Y., on which he will erect a mill for velvet weaving. The mill building itself will be 90x160 feet.

A new weaving mill to produce ribbon has been started at South Hill, Va. Frank D. Herbsher superintended the opening of the plant, which has 40 looms. Stock has been subscribed to by local citizens.

Uxbridge Worsted Company, Cedartown, Ga., has installed a new multiple pass, pin type tenter frame manufactured by the Philadelphia Drying Machinery Company and sold by F. W. Warrington Company, Philadelphia.

Tennessee Eastman Corporation is adding to its production facilities at Kingsport, Tenn., which will enable the company to increase the output of acetate rayon staple fiber.

Judson Mills, Greenville, S. C., which is selling the homes in the village to employees at its No. 2 plant, will also sell some of the homes in the No. 1 mill village to the employees.

The Erwin Cotton Mills Company, Durham, N. C., is constructing two large cotton storage warehouses costing approximately 18,000. They will be 75x90 feet.

Another story will be added to the Plant No. 5 unit of The Springs Cotton Mills, Lancaster, S. C., Spinning machinery will be installed in the additional space.

National Textile Company, Charlotte, N. C., has been granted a charter to deal in cotton, cotton waste and kindred commodities.

Puritan Weaving Company, Fayetteville, N. C., has installed approximately $100,000 worth of the latest type of spinning machinery.

The Colonial Coverlet Company, Chattanooga, Tenn., has moved its plant to Ellijay, Ga.

Changes in Nopco Southern Organization

Several changes have just been announced in the southern sales organization of the National Oil Products Co., of Harrison, N. J. C. E. Elphick, who has been representing the company in South Carolina and South Georgia, has been transferred to the Harrison office as assistant manager of the textile division. Dan S. Rion, formerly representing the company in North Georgia and Alabama and Mississippi and Western Tennessee, now covers all of Georgia and South Carolina, with headquarters in Greenville, South Carolina.

Frank J. Chadwick, who has been connected with the Harrison headquarters and laboratory for the past six years, has been transferred to represent the company in Alabama, Mississippi and Western Tennessee, with headquarters in Birmingham, Ala. Prior to joining the Nopco organization, Mr. Chadwick was associated with Solvay Sales Company.

George H. Small, Atlanta, remains as southeastern sales manager, and R. B. Macintyre as the company's representative in North Carolina and Eastern Tennessee.

New Textile Publications of Interest

Anaconda Wire and Cable Company, 25 Broadway, New York City. Revised edition of the magnet wire catalog, giving more information on magnet wire, electrical and physical properties, and the use of magnet wire coils. A 92-page illustrated publication. Also available in pocket-size handbook containing technical tables of information to the shopman and engineer.

General Electric Company, Schenectady, N. Y. Three publications of interest to textile plants. GEA-2420 on capacitor motors for a wide range of purposes; GEA-2426B on the outdoor oil-blast circuit breakers; and GEA-2596A on the metal-enclosed switchgear with draw-out air circuit breakers for low-voltage feeders. Please order by number.

Hatch Textile Research, Inc., 26 East 26th Street, New York City. Cards bearing information on fadeometer and sunlight equivalents, table of gauges and needles of full-fashioned hosiery, comparison table of strands of silk and their equivalent denier size, turns per inch of hosiery crepes, and price list for fadeometer tests.

Peerless Pump Division, Food Machinery Corporation, 301 W. Avenue 26, Los Angeles, California. A new bulletin describing an improved type of water-lubricated pump, in which no oil is used below the surface and the entire shaft of which is supported by cutless fluted rubber bearings.

Johnson Bronze Company, 310 South Mill St., New Castle, Pa. A unique 5x14½-inch booklet in the shape of a bronze bearing, giving factual information on the manufacture and service of bronze bearings, standard stocks available, sizes, etc.

The Hart Products Corporation, 1440 Broadway, New York City. Folder descriptive of Caro-Gant warp dressing, a dilutent-free warp size. Also mentions uses of other Hart products, such as Bozolene, Magicol, rayon throwing oil, etc.

Morse Chain Company, Ithaca, New York. Bulletin No. 75, a streamlined, convenient, compact edition of power transmission data. Included is announcement and design data on round pin roller chain, which retains the Morse self-lubrication feature in every link.

Alabama Polytechnic Institute, Auburn, Ala. "Possible Methods for Increasing the Consumption of Cotton and Cotton By-Products," by A. R. Macormac and C. A. Basore. Gives 58 ideas for increasing the use of cotton.

Westinghouse Electric and Manufacturing Co., East Pittsburgh, Pa. Literature bringing out facts from an independent source on the uses and performance of Micarta, as especially applied to refrigerators.

The Thompson Electric Company, 1101 Power Ave., Cleveland, Ohio. A 40-page illustrated catalog on the company's lamp lowering hangers, lamp shock absorbers, and accessories. Also revised price schedules.

The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J. Fourth edition of the company's catalog on rubber products for industry, a condensed catalog on mechanical rubber goods.

Ingersoll-Rand Company, Phillipsburg, N. J. Illustrated catalog descriptive of the Type 30 industrial compressors and vacuum pumps. New line of sizes from ¾ h.p. to 5 h.p. announced.

Brown Instrument Company, Philadelphia, Pa. Bulletin No. 2-17, completely describing a new line of temperature and pressure recorders, indicators and controllers.

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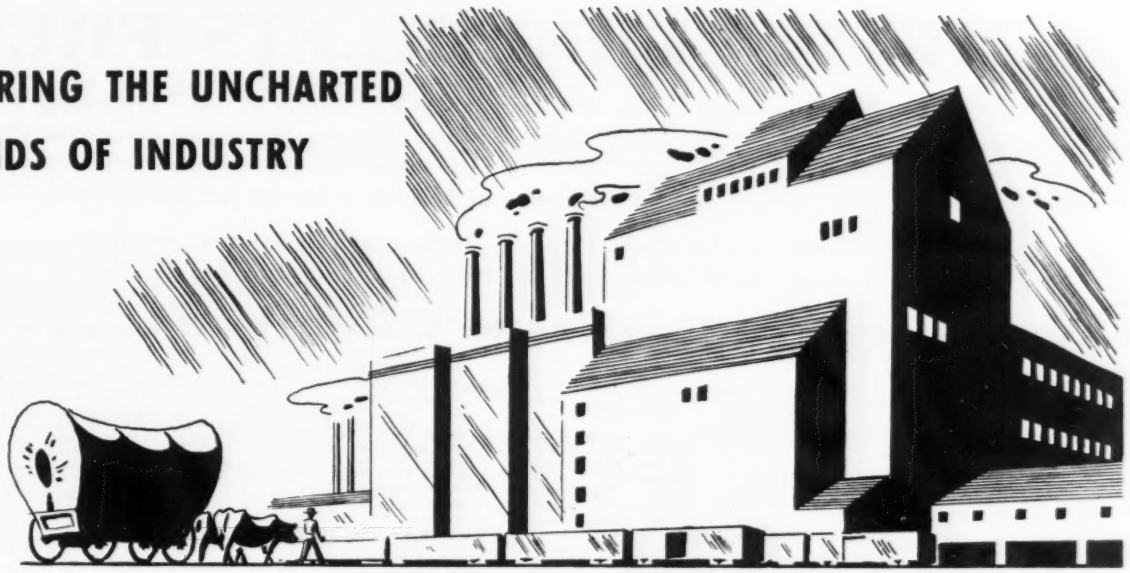

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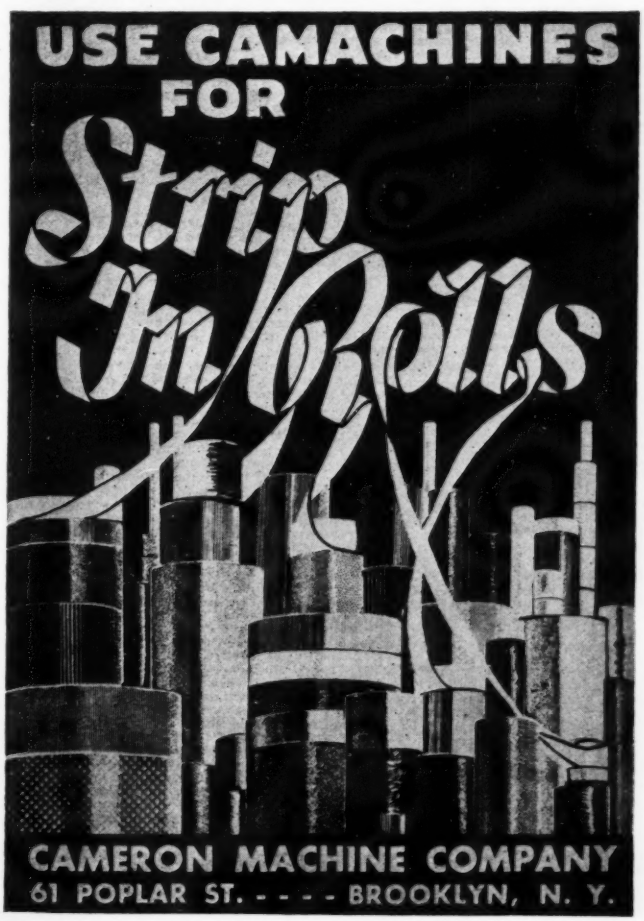

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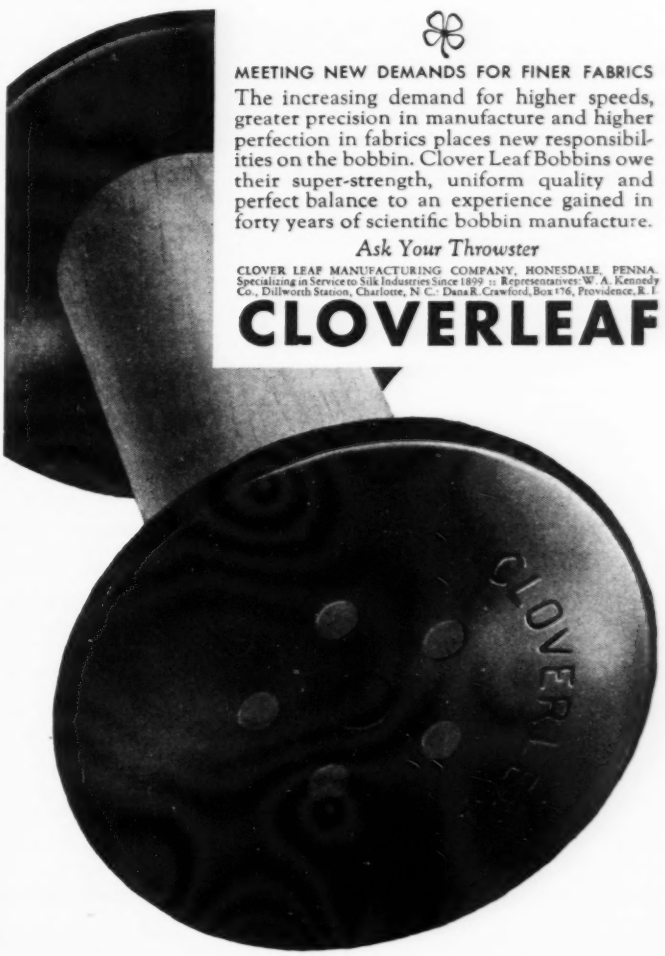

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214. Saco-Lowell Cotton Machinery—Spinning—the second edition of a 56-page booklet, illustrated with the company's product and containing valuable charts, production tables and other spinning data. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

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218. Butterworth Electric Guiders—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider and is unexcelled for fast, accurate guiding. H. W. Butterworth & Sons Co., Philadelphia, Pa.

223. Alloyed Iron in Southern Industrial Fields—16 page illustrated catalog dealing with the properties available in modern cast irons. International Nickel Co., 67 Wall St., New York, N. Y.

224. "Tank Talk"—Sixteen page booklet of illustrations showing various types of elevated steel tanks, constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said. R. D. Cole Manufacturing Company, Newnan, Georgia.

228. Solutions for Your Problems—20-page illustrated booklet containing valuable information on the scouring and processing of wool and other fibres. Detergent Products Corp., Atlanta, Ga.

233. Catalog No. 22—an attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. Meese, Inc., Madison, Ind.

234. They Stay Brighter Longer—This interesting illustrated booklet containing facts about Mazda lamps will be sent you free on request. General Electric Company, Dept. 166, Nela Park, Cleveland, Ohio.

238. Glorified Light—A 32-page book illustrative of the vital part proper painting plays in scientific lighting and in the reduction of maintenance and production costs. Pittsburgh Plate Glass Co., Pittsburgh, Pa.

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253. Brown Air-O-Line Controllers — This booklet will prove invaluable to the men in charge of dyeing, finishing and slashing, as well as the textile executive. 32 illustrated pages describing the various Brown Controllers. The Brown Instrument Co., Philadelphia, Pa.

258. Automatic Overhead Cleaner for Spinning, Winding, Warping and Twisting—24 page booklet showing the new American MonoRail automatic cleaner in operation on MonoRail track circuit over Spinning, Warping, Winding, Twisting, etc. This cleaner incorporates a new scientifically designed blower producing a whirling column of air directed and controlled so that it prevents accumulation of fly with no harm to roving. The American MonoRail Company, Cleveland, Ohio.

259. Cotton Conditioning with Texspray Compound — 18-page booklet describing the Texspray method of cotton conditioning. It has been proven that this method will save money, increase production, increase flexibility of fiber, eliminate static and reduce fly and dust. The Texas Company, New York, N. Y.

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263. Gastonia Brushes—New catalog and price list showing the complete line of brushes for the textile mill. Gastonia Brush Co., Gastonia, N. C.

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271. The New American Adjustable Diameter Wedgebelt Pulleys—illustrated leaflet describing the American adjustable diameter sheaves designed to produce the best performance in all types of V-belt driven textile machinery. American Pulley Co., Philadelphia, Pa.

272. Where to Buy Monel Metal Textile Equipment—Attractive booklet which lists the names and addresses of experienced fabricators of Monel Metal equipment for the textile mill. The International Nickel Company, Inc., 67 Wall St., New York, N. Y.

284. Morton Nickel Iron Quick Opening Handle Gate Valve—Illustrated leaflet describing the new Morton Valve for dyeing machines, pipe lines, steam and water lines, boiler blower valves and throttle valves. Morton Machine Works, Columbus, Georgia.

286. Tricon W-30—Study of wetting agents and their activity with recommendations for textile processing. Rohm & Haas Co., Philadelphia, Pa.

287. New American Pulley Motor Base Catalog—an attractive new illustrated catalog describing in detail construction and application of new tension control motor base. Includes data comparing performance of drives with and without tension control motor base and applications are shown for both flat and V-belt drives. American Pulley Co., Philadelphia, Pa.

289. Caustic Soda Bulletin—a data and reference book designed for the user of caustic soda. Complete with charts, drafts and formulas. Pennsylvania Salt Mfg. Co., Philadelphia, Pa., who also manufactures Hydrogen Peroxide.

290. Hyatt Roller Bearings on Textile Machinery of All Kinds—34 page booklet which describes and illustrates how Hyatt bearings are being applied to textile machinery. Hyatt Bearings Division, Newark, New Jersey.

295. Fence Facts—A new booklet illustrating and describing chain link fence in a variety of styles and four different metals for every type of fencing installation. Also wrought iron fence in various beautiful styles. A concise handling of information for those wanting facts about fence. Page Fence Association, Bridgeport, Conn.

296. Full Fashioned Hosiery Manufacture — Illustrated folder giving the history of full-fashioned knitting and describing in detail the different processes in present day manufacturing and the application of Gulf lubricants to the various machinery. Gulf Oil Corporation, Pittsburgh, Pa.

297. Lunkenheimer List Price Schedule R-I—new 44 page catalog covering the entire line of valves, boiler mountings and lubricating devices manufactured by the Lunkenheimer Company. The Lunkenheimer Company, Cincinnati, Ohio.

299. The New International Time Recorder—information on the new automatic time recorder which gives complete wage and hour records. International Business Machines Corp., New York, N. Y.

301. Norma-Hoffmann Bearings Catalog — Norma-Hoffmann Bearings Corp., Stamford, Conn.

305. Tannate Belting — leaflet describing Rhoads Tannate leather belts and their uses and advantages in textile mill operation. J. E. Rhoads & Sons, Philadelphia, Pa.

306. Waterproof with Sco-Co—information on the advantages of using Sco-Co industrial finishes and paints in the textile industry. Southport Paint Co., Inc., Savannah, Ga.

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314. Winding Production Chart—this useful production chart can be used for any style of winder. Also included are instructions for figuring yarn takeup speeds. Universal Winding Co., Providence, Rhode Island.

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319. Lubriplate—the modern textile machinery lubricant—attractive illustrated folder giving recommendations for textile machinery lubrication. Lubriplate is the new lubricant which forms a film on shafts, bearings, gear teeth, etc., which prevents wear, corrosion and contamination due to products of wear. Lubriplate Division, Fiske Bros. Refining Company, Newark, N. J.

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321. Wooden Tanks for Many Purposes—attractive catalog containing much helpful data relative to general design and construction of wooden tanks for textile use. Also contains an interesting tabulation of experiments with different woods available for tank purposes Hauser-Stander Tank Co., Cincinnati, Ohio.

322. The Application of Soaps and Soap Products to Textile Processing—40-page illustrated booklet covering the principal operations in textile processing. Special notes and suggestions are given for those operations requiring soaps or soap products. Colgate-Palmolive-Peet Company, 105 Hudson St., Jersey City, N. J.

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330. Tools for the Textile Trade—a twelve-page booklet illustrating and describing specially selected tools for all textile mill departments—Loom Fixers, Spinning Room Fixers, etc. Snap-On Tools Corporation, Kenosha, Wisc.

331. Unbrako Self-Locking Hollow Set Screw—Bulletin Form 532 includes illustrations and descriptive matter of this latest improvement in socket set screws. This bulletin also features the complete line of "Unbrako" Socket Screws. Standard Pressed Steel Co., Jenkintown, Pa.

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333. Fafnir Ball Bearings for the Textile Industry—Outlining the applications and advantages of ball bearings on textile machinery. Fafnir Bearing Co., New Britain, Conn.

334. Precision Winding for Silk and Rayon Yarns—Describes the new No. 50 Leesona Winder and all attachments that are used for silk hosiery threads and rayon yarns. Universal Winding Co., P. O. Box 1605, Providence, R. I.

335. Casters and Wheels—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this. Darnell Corp., Ltd., P. O. Box 4027-N, Station B, Long Beach, Calif.

337. Sizing and Finishing—A pamphlet which will give the mill man an understanding of starch properties which will lead to greater efficiency in sizing and finishing. Stein, Hall & Co., Inc., New York City.

338. Thickening Materials for Textile Printing—Describing materials and methods employed in preparation of color thickening so that it may be properly and economically transferred to cloth through the medium of the printing machine. Stein, Hall & Co., Inc., New York City.

339. Diehl Textile Motors—a 12-page booklet illustrating various types of installations on textile machinery and equipment and describing the different types of Diehl Motors, as well as Diehl Grinders and Fans. Address Textile Dept., P. N. Thorpe & Co., 267 5th Ave., New York City.

340. Notes on Cotton Warp Sizing—a 45-page handbook giving valuable data on the purposes and properties of various sizing products, their uses and preparation, with much information on the operation of slashing equipment. Will help solve many sizing problems. Address The Hart Products Corp., 1440 Broadway, New York City.

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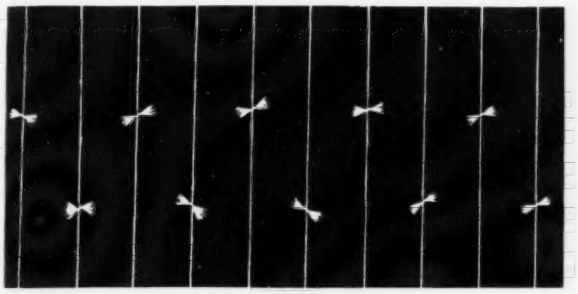

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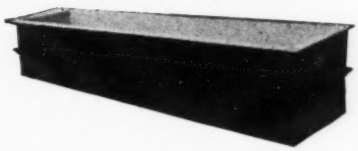

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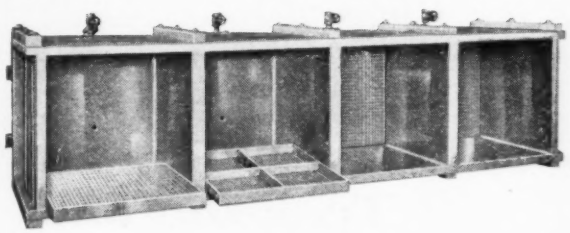

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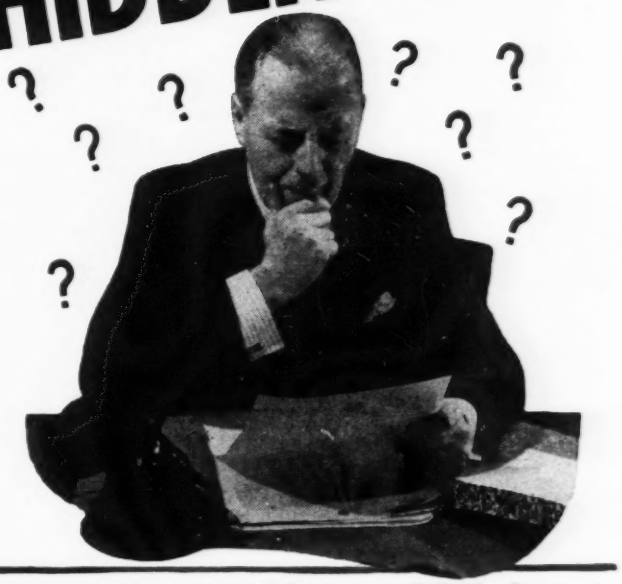

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Continued from Page 110

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345. The New Air-Cooled Color Matching Skylight—illustrated leaflet describing the new air-cooled Macbeth BKX83 color matching skylight which is the last word in color matching and color identification equipment. Macbeth Daylighting Corp., New York, New York.

346. Dependable Finishing for Modern Elastic Top Hosiery—describing and illustrating equipment for basting and attaching insert elastic, attaching wide or welt elastic and seaming elastic in women's hosiery. Union Special Machine Company, 400 North Franklin St., Chicago, Ill.

347. Rhoplex Resins—Attractive folder discussing the outstanding properties of these Aqueous Dispersions with suggestions for their application to textiles. Rohm & Haas Co., Inc., Philadelphia, Pa.

348. Johnson Ledaloyl Bearing Bronze—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricating bronze for textile bearings and bushings. Johnson Bronze Company, New Castle, Pa.

349. The Best Universal Locking System—Literature describing the Best Lock which has an exclusive interchangeable core and offers a solution to locking problems. Best Universal Lock Company, Indianapolis, Ind.

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354. Vacuum Cup Pulleys—Leaflet describing the new Vacuum Cup Pulley which gives greater production, less power cost, less maintenance cost, and much longer life to belts and bearings. Vacuum Cup Metal Pulley Company, Inc., Detroit, Mich.

355. Air Conditioning in Cotton Spinning—A technical discussion of the need of adequate humidification and controlled air change in the spinning room of the textile mill of today. Ask for Bulletin 539. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

356. Parks Textile Specialties—A 14 page bulletin with brief descriptions of the Parks line—Automatic Airchanger—Central Station and Unit Air Conditioners—High Duty, Turbo and Turbomatic Humidifiers—Automatic Regulation—Traveling Cleaners—Portable Dustless Card Stripper—Humidifier Valves and Accessories. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

357. Caro-Gant—The Original 100% Active Warp Dressing. Attractive folder describing Caro-Gant the Warp Dressing that makes stronger more elastic warps with a maximum breaking strength and a minimum reduction in elasticity. Hart Products Corp., New York City.

358. Rhonite Emulsions—Attractive bulletin describing the Rohm & Haas complete line of Urea Formaldehyde Resins for Textile Finishing. Rohm & Haas Co., Philadelphia, Pa.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shop, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full-fashioned knitting.)

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

65. Bulletin No. 508. Cooper-Hewitt Industrial Illumination—booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Electric Vapor Lamp Co., Hoboken, N. J.

77. Bulletin S 200—Illustrating and describing the new Reeves variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., Jersey City, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

128. Houghton's Hand Book for the Hosiery Dyer—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

152. Plant Check-up List—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154. Johnson Bronze Bulletin No. 340—showing over 800 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago, Illinois.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Providence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greated efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

178. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washings. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. Form 496—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

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Makes her buy the same kind <u>again</u>

To satisfy the consumer so well that she makes it a point to remember and ask for a certain kind of hosiery again and again is the manufacturer's aim.

Unvaryingly maintaining perfect appearance and quality of *every* pair of stockings or socks is just one of the many reasons why hosiery manufacturers throughout the world recognize Proctor & Schwartz Boarding Machines as the ideal equipment.

The "boarders" like it for the comfortable working conditions it offers by eliminating the usual backache and eyestrain.

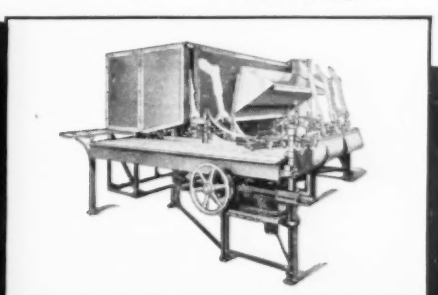
Production is as high as the manufacturer wishes... limited only by the mechanical speed of 32 dozen pairs per hour on the Proctor Machine for Women's Hosiery and 52 dozen pairs per hour on the Proctor Machine for Men's Half Hose.

Whether you finish seamless or full fashioned hosiery for women or men, or whether your hosiery is light, medium or heavy weight, you will find the latest Proctor Boarding Machines unparalleled money-saving equipment. The price of the machine is such that it assures the buyer a substantial return on his investment.

Ask for the well-illustrated descriptive bulletin.

PROCTOR & SCHWARTZ · INC · PHILADELPHIA

Automatic Machine for Women's Hosiery



Automatic Machine for Men's Half Hose

Proctor & Schwartz BOARDING MACHINES

KNITTING CIRCULAR

What's selling in men's, women's and children's anklets—the newest and liveliest development in the hosiery field? What are the popular types? How and on what machines can they be produced economically? Knitting Circular keeps close tabs on the New York market through our private and very active hose sleuth. His report, presented here, we believe you will find interesting and useful.

MEN'S ANKLETS ON THE UP

Practically everywhere—not only in the department stores and men's shops, but in the chain stores—our hose hound found that men's anklets are doing astonishingly well, and that plans are being made to push them on a larger scale. One world-famous department store has doubled its business in men's anklets and crew socks this season. Typical best sellers are shown at upper right—a dark anklet with light blue widely spaced vertical wrap stripes and a light blue and white wrap clock; and a black sock with both vertical and horizontal stripes in various widths and colors. The third item shown, a gray with a red and black wrap clock, is a fast-moving number in a smart Fifth Avenue store that is doing what one intelligent salesgirl described as a "perfectly wonderful" business in men's hose of this type. "I was frightened," she said, "when I saw the quantity the buyer had bought . . . but we sold them all and a lot more, too." The first two items illustrated are made on the Scott & Williams' HH-PW machine; the third on the S & W ES machine. All have stand-up rubber interlaced ribbed tops.

The popularity of 6 x 3 ribbed half-hose has carried over into the anklet styles for men. Shown at the right are three of this kind that are steady profit producers, according to reports from several stores—a black silk ribbed anklet, a blue lisle with a beautiful embroidered clock, and a bluish gray wool with blue and white horizontal stripes in varying widths, all ribbed-to-toe. All have elastic interlaced ribbed tops and are easily and economically made on the Scott & Williams' Komet machine, one of the most versatile machines obtainable.

ANKLETS AWEIGH!

Many stores are getting ready with large stocks of women's lisle, wool, angora combinations and other heavy types for winter sports. Typical of the best and higher priced of the campus type are the two illustrated in the group at the far left. The first can be made on the S & W HH machine; the other on the S & W Spiral Type machine. Shown next to these are two large volume plain color anklets from a large chain store. The Bermuda anklet can be produced on any S & W machine. For the 6 x 3 with turn-over cuff the Komet machine is ideal, since it eliminates separate ribbing machines and the expensive hand transfer of cuffs and knits ribbed-to-toe.

BIG BUSINESS IN SMALL FRY ANKLETS

Stripes, of course, are the thing in the children's market—the more stripes with the greater variety of widths the better. Illustrated at the left are various priced items selected as representative of the favored styles. Included among these is a Links-and-Links stand-up top anklet in a strikingly attractive pattern, which is newest of all and shows great promise wherever it is sold. All are made on the S & W Komet machine, which produces any combination of ribs, and different combinations in different portions—ribbed-to-toe.

Included, too, are four fast-moving children's anklets. The one at the lower right is a striking combination of horizontal stripes in five colors—with a different combination of stripes in the stand-up top—a new development on Scott & Williams' Standard H machine on which it is made.

Our staff will be glad to give you further information on these machines and help you select those which are best adapted to your production.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

Established 1865

KNITTING SECTION

Single-Unit Machines are Feature of MODERN HUFFMAN PLANT

By John C. Fonville

BACK IN 1913 BOB HUFFMAN came home from college to rest but found himself manager of a one-horse 20-machine seamless hosiery mill, making men's socks in one size and two colors. His father, Samuel Huffman, had started up this one-horse mill some years before, but upon young Bob's arrival the superintendent had disappeared, and so, as Bob put it, he immediately became the one-horse manager of a one-horse sock plant.

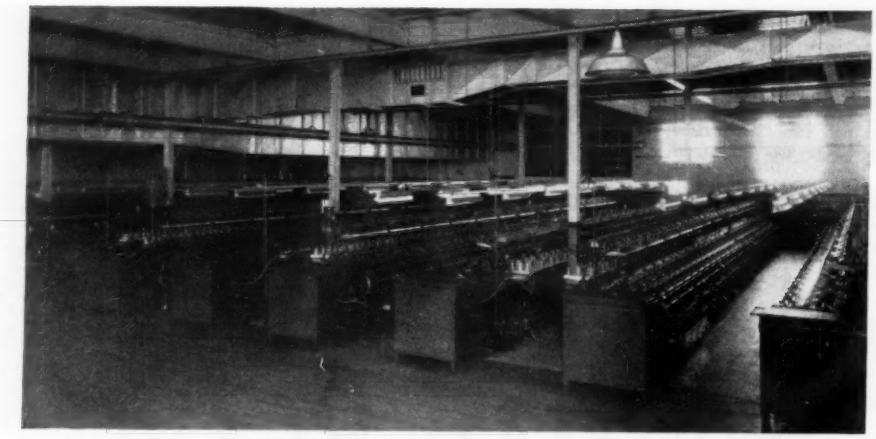
Today that plant has grown from 20 machines in one building until the present Huffman organization has three complete unit full-fashioned plants and an up-to-date diversified half-hose mill, totaling more than 100 full-fashioned knitting machines and over 300 circular machines and employing 1,400 people; with its own throwing plant and its own sales organization. The last of the plants to be erected, with which this story will mainly deal, is the last word in modernization, from the prominently displayed neon sign on top of the glass-block building to the stoker-fed furnace in the basement. But at this time let's have a bird's-eye look at the entire organization.

First Men's Full-Fashioned Hose in South Knitted by Huffman

The first plant that R. O. Huffman had, as stated previously, was the small seamless plant at Drexel, N. C., seven miles from Morgantown, where the three full-fashioned mills of the group are located. In 1922, in conjunction with A. V. Victorius and the Waldensian Hosiery Mills, also well-known names in the knitting industry, the Huffman organization took over the Garrou Mills, at that time a going concern with 75 seamless machines; in recent years that seamless mill has been changed over into a modern full-fashioned plant, and it is interesting to note that the first men's half-hose to be knit on full-fashioned machines in the South were made in this plant in 1928. During 1926 the Morganton full-fashioned mill was organized and was built adjacent to the Garrou plant; in this is housed the throwing plant. This year the new full-fashioned mill was erected.

The Huffman sales organization, which was instituted the last few months of 1938, covers every state in the union and has over 1200 retail outlets for the company's products, opened mainly through the promotion of the new Huffman patented foot stocking made on the single-unit full-fashioned knitting machine. The main sales office is in Morganton and there are branch sales offices in New York City and San Francisco. In the old days this sales organization would have had only one size and black and tan colors to offer, but today the diversi-

The newest addition to the Huffman organization, located at Morganton, N. C



The modern air conditioned knitting room of the new addition to the Huffman organization. These are the single-unit machines, on which the stocking is knitted complete without requiring the topping operation. Note the glass-block construction of the walls, and the fluorescent lamps . . . . . .

fied line includes all sizes of ladies' hose, in three proportional lengths, 23 styles, and 60 colors, from 7-thread to 1½-thread, all styled by the company's own stylists; and for the men there are 13 styles with any number of colors and in from eight to ten color combinations, advertised through such national mediums as Vogue, and supplemented with window and counter displays.

With the foregoing as a background it is interesting to study the newest of the plants named the Huffman Full-Fashioned Mills, Inc., and built by Mr. Huffman and associates in response to popular demand by the citizens of Morganton.

Description of Newest Plant

The new mill is located about one-half mile from the heart of the city on U. S. Highway No. 70, set back from the road about 75 yards and facing west, which relieves the main manufacturing operations from the direct rays of the sun. In the center of the building on front is a large neon sign indicating to all passers-by that here is the place where Huffman hosiery is made.

Upon entering the office, which is on the first floor, one is assured that cleanliness is the by-word. The floors in the office are of an asphalt tile material over a concrete base, with mahogany panels reaching from the floor upward for four feet. Each window is equipped with Venetian blinds. The ceiling is of a new type of fiber board of a light color to give maximum efficiency in connection with the semi-indirect lighting. As throughout the remainder of the plant, sprinklers are in evidence.

The office desks and chairs and the furniture in the directors' room is pecan wood. Here may be seen the latest type of adding machines, typewriters, check-writers, etc. Built into the center of the general office is a vault with fireproof door and combination lock, used to house the vital books and records of the company. Unit heaters controlled by thermostats are provided with transmitting ducts built into the walls, at top to exhit the used air and at bottom to replenish the supply with fresh air. Unit heaters are also placed in the operating departments.

Glass Blocks and Fluorescent Lamps

Space has been provided on the first floor, across from the general offices, to house a modern cafeteria. In this room the floor is cement, and is further insured against fire by a fire-door between the cafeteria and the other rooms. The shower and locker rooms are of tile, the lockers being of steel.

The large knitting room, on the second floor, is air-conditioned on the central station type as the room is totally enclosed, having the glass block type of construction. Flooring here is sycamore with a special finish for preservation laid over a 2⅝-inch sub-floor. The lighting is fluorescent of the 30-inch tube size, with eight lights over each knitter's alley.

A sectional view of the new seamers in the modern addition. Safety tables are used. Lighting (not shown in this view) is fluorescent. Work is in straight line progression, the operatives receiving the goods in canvas baskets, so designed that goods are not snagged or injured in transit . . .

Single-Unit Machines

The full-fashioned knitting machines are the newest single-unit type on which the complete stocking is knit in one operation, eliminating topping and transferring. They are of 45-gauge, with 26 sections to the machine. The needle bars are 14½ inches in length, which are said to place more fabric in the top of the stocking and give it greater elasticity. Though the machines are 45-gauge, the fabric in the stocking is only 12 needles short of 48-gauge. The company is placing its own patented toe in the single-unit stockings, a method which reinforces the toe by 12 threads plus the weight of the stocking. The organization's other plants have 42-, 45-, and 48-gauge machines, and at this writing the new plant is being further equipped with 51- and 57-gauge single-unit machines. The Huffman organization is a producer of one of the largest volumes of the single-unit stocking in this country, a fabric so made that the junction at the gore on the ankle bone is eliminated.

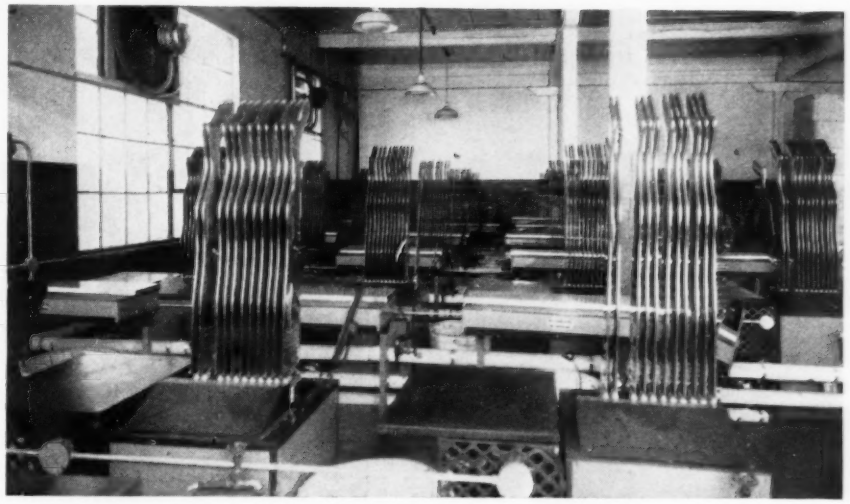
The knitters' cabinets are the latest model, conveniently placed for use. The chain drive is used in the full-fashioned machines, the motors being controlled for speed by limit switches.

At one end of the knitting room is built a smaller room of suitable size in which the lubricants and supplies are kept.

On the west side of the second floor is located the looping, seaming, and inspecting departments, and the stock room. This room runs the entire width of the building, the north side being used for stock and the east for actual mill operations. Flooring here is also sycamore over the 2⅝-inch subfloor. Gray stock is brought from the knitting room in canvas baskets and placed convenient to the loopers, which are of the newer type, and used in conjunction with the safety table. Work is in straight-line progression and the seamers receive the gray goods without undue movement. Loopers are equipped with individual lighting units, the seaming operation being lighted by overhead fluorescent lamps. The inspection forms are of two types, both the automatic inspection form with mirrors and the new air-operated inspection form. Windows in this department have obscure glass.

The stock room is most modernly equipped with steel shelving and it is here that the Huffman brand is kept until shipped. A normal system of perpetual inventory is maintained, which permits one-day shipments of goods. Trucks for moving finished goods have rubber casters, and the equipment of the shipping clerk is up-to-date in every respect. The new machine for zoning parcel post shipments proves a great time-saver.

The organization's dyehouse is equipped with various size dye kettles and extractors of a corrosion-resistant material, each kettle having its own automatic temperature control instrument, which, according to the dyer, is proving an economy from the standpoint of saving in power and steam. The sample dye laboratory is furnished with one-pound dye machines, scales, skein winder, single strand tester, conditioning oven, and other equipment found in a modern laboratory.



The boarding room, utilizing the dual heat steam forms with automatic control. The exhaust fans keep the room cool

Boarding is done on the new dual heat steam forms with automatic control Large exhaust fans keep the boarding room cool and well ventilated. The flooring is maple; windows are of the type used to diffuse the light and prevent glare.

Finishing operations are carried out on individual tables of such size that only one operative works at each, and each table is screened from surrounding tables to give more privacy to the employee. Lighting here is incandescent.

Building Construction

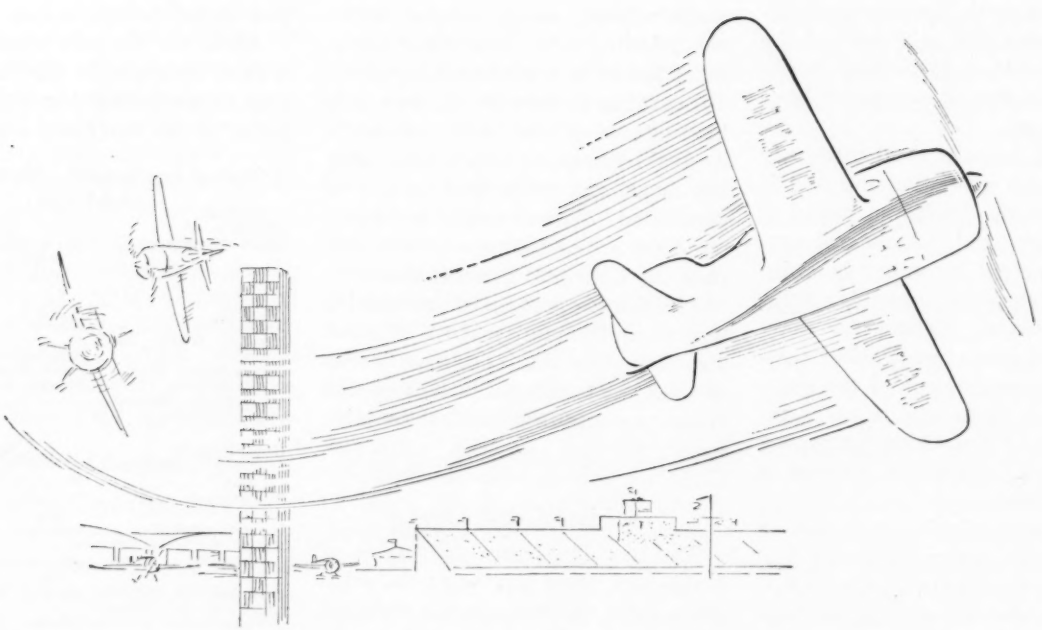
The new Huffman building is of brick and steel construction, with glass block windows in the knitting room, and with obscure glass and steel sash in the other departments. The gravel top roof has 5 plies of roofing paper with each section lined with asphalt. A fiber insulation material is used in the roofing. The back of the building is temporary so that future expansion can more readily be made. Throughout the entire plant are located electric water coolers, conveniently placed for the operatives.

All in all, the new plant is an excellent example of the modernization program that has long been the policy of the Huffman organization

Stock room in the new mill. A system of perpetual inventory is in force and the mill is able to make one-day shipments. The machine on the table is a handy device to speed up shipments of parcel post orders. The shelves are steel. This view shows only part of the stock room.

Principal Equipment—New Huffman Addition

Machine—	Supplier
Office Machines	Burroughs Adding Machine Co., Royal Typewriter Co., Marchant Calculating Mach. Co.
Vault Door	Mosler Safe Co.
Electric Water Coolers	General Electric Co.
Construction Steel ..	Dave Steel Company
Steel Sash	Mesker Bros. Iron Co.
Glass-Block Windows	Libby-Owens-Ford
Floor Surfacing	Tropical Paint & Oil Co.
Unit Heaters	Young Radiator Co.
Lighting (semi-indirect)	Graybar Elec. Co.
Fluorescent	Benjamin Elec. Mfg. Co.
Incandescent	Graybar Electric Co.
Unit for machines (loopers)	Benjamin Elec. Mfg. Co.
Switches on lighting	Square D Co.
Switches on motors (machines)	Crocker Wheeler Electric Mfg. Co.
Fire Door	Richards-Wilcox Mfg. Co.
Loopers	Sou. Tex. Machy. Co.
Seamers	Grosser Knitting Mach. Co.
Tables for seamers and loopers	American Safety Table Co.
Post-O-Meter	Postage Meter Company
Motors—	
Knitting Machines	Crocker Wheeler Co.
Seamers and Loopers	General Electric Co.
Baskets	W. T. Lane & Brothers
Knitting Machines .	Alfred Hofmann, Inc.
Knitting Cabinets ..	Joseph Amon
Controls on Knitting Machines	Crocker-Wheeler Elec. Mfg. Co.
Automatic Sprinklers	Crawford & Slaten
Low Pressure Boiler.	Pacific Steel Boiler Corp.
Stoker	Auburn Foundry Company.
Trucks in stock room	W. T. Lane & Brothers
Air-Conditioning ...	Parks-Cramer Company
Temperature controls	Parks-Cramer Company
Inspection forms ...	Textile Machine Works.
Boarding forms	Paramount Textile Machinery Co.



As the race for profits in the making of full-fashioned silk stockings becomes more and more a race for *technical superiority*, the demand for "T M W" Needles (and the service back of "T M W" Needles) shows a strong and steady increase.

"T M W" NEEDLES

TEXTILE MACHINE WORKS, READING, PENNSYLVANIA

"He who would gather roses, must not fear thorns"
DUTCH PROVERB

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary eighteen-section forty-two gauge machine.

TEXTILE MACHINE WORKS READING, PA.

KNITTING KINKS

Eliminating Make-Up Drop Stitch

EDITOR COTTON:

Drop-stitches in the make-up have always been headaches to fixers on S & W Model HH machines, especially so, if the machines are a few years old. Countless minor adjustments may be causing these drop-stitches and, too, there may be some little defect somewhere that is easily overlooked. A brief review of some of the things that may cause these make-up stitches to drop may locate the trouble.

To begin with, is there any tension on the top yarn? It doesn't need much, just a little. A heavy yarn without tension may run ahead or twist and loop off the dial hooks. Possibly the dial is too close to the cylinder. If the hooks are touching the sinkers the stitch loops will be slack and easily thrown off by the cylinder speed of the machine. Lower the cylinder.

Does the dial fit tight to the cap at all points? If not, there will be a rocking motion and the dial needles will have room to play at the loose points and throw off their loops. Be sure the dial is in its proper position and tightened firmly. Then lower the dial cap until it fits the dial snugly all the way around. Examine all the dial hooks and cast-offs. Many fixers neglect this after a bad smash-up. The hooks may be too tight or too loose in their slots. Bent walls or hooks will cause tight places and not enough friction on the cast-off tail will make them act too freely. The butts may be bent or worn and not making their properly intended movement. Hooks may be bent sideways, down or up, or they may be closed or open too much. They might be old and worn or even have sharp edges on them. Cast-offs should likewise be examined.

Perhaps the rib knitting cam is pressing too hard against the dial or it may not be down far enough and missing some of the butts. Knitting cams are funny that way. They have to be just so. Sometimes they actually seem temperamental. If the rib knitting cam is not adjusted properly it will push the hooks and cast-offs out too far. If it is worn it will not push them out far enough. The transfer push-out cam may be down so far it rides the top of the butts and knocks them out at the wrong time and places. Then, too, a bent or stiff sinker will cause the dial to jump and lose stitches. Be sure the dial is timed-in correctly and that the webbing on the bottom of the dial is in good condition. Worn or "chewed" webbing is caused by the dial being so low it rides the sinkers, and rough webbing holds the fabric from running down. Line the cylinder needles well.

If all of these points are checked and found in good order and the make-up still insists on dropping stitches, the trouble is no doubt caused by a worn inside sinker ring. On the older model machines this ring is made of brass and is comparatively soft. The bottom guide blade of the sinker constantly coming in against this brass ring wears depressions in it, thus allowing the sinker to come in too far. With the sinkers too far in the make-up stitches will be longer and looser than necessary, so when the stitches get around to the right side sinker cam, which pulls the sinkers out, the stitches will be too big and easily loop off. Unless a new brass ring can be put in the only means of correcting this defect is to hold the sinkers out to their proper position at the point of make-up, directly over the right side running stitch cam, by the use of the left side sinker cam operating lever. This lever is operated by the side and central sinker cam lever rod which is supported on the main drum by cam No. 908. By reducing the height of this cam at the right point the movable central sinker cam will pull the sinkers out to the desired position, and the make-up stitches will be held to their proper tension.

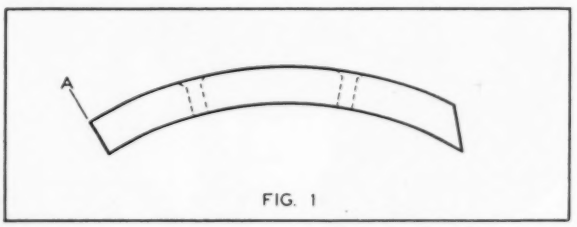


FIG. 1

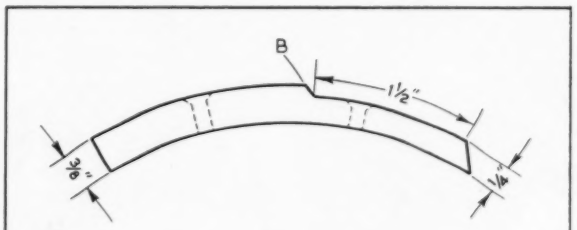


FIG. 2

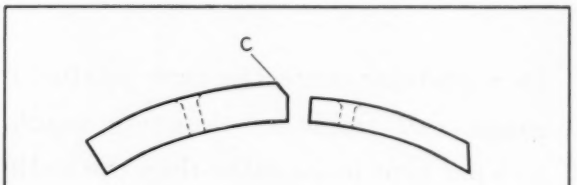


FIG. 3

Cam No. 908 is a ⅜-inch cam and is shown in Fig. 1 with (A) the back end where the sinker cam lever rod drops off and pulls the sinkers out when the machine changes from the welt to the top. By cutting this cam as illustrated in Fig. 2 the lever will drop ⅛-inch which is enough to pull the sinkers out to their correct make-up positions.

There are five main drum kicks in the make-up—two long kicks occurring first, created by the main drum pawl, and then three short kicks by the auxiliary pawl. The top yarn finger drops in with the second main pawl kick, and this is the exact place for the sinker cam rod to drop also. It will be found that this is the very front end of cam No. 908. The make-up round of stitches will be completed and the dial hooks pulled back in the dial with the first auxiliary kick, so by cutting cam No. 908 to a thickness of ¼-inch back from the front end a distance of 1½-inches, the sinkers will be held out for the complete make-up revolution of the cylinder. The cam should be slightly beveled back at (B) (Fig. 2) to permit the rod to ride up easily.

In case the fixer does not care to cut this cam and thereby ruin it for possible future use he can resort to the method shown by Fig. 3. A short piece of ¼-inch cam, 1½-inches long, can be inserted in front with another short piece of ⅜-inch cam for the back. Be sure the piece of ⅜-inch cam is the proper length so that the sinker rod drops off at the exact intended place. Also, be sure to bevel off the front end of this cam as shown at (C).

The machine will now make-up with uniform stitches and the percentage of make-up drop-stitches will be reduced to a minimum.

CONTRIBUTOR NO. 6893

Single- or Multiple- Job Finishing Operations

EDITOR COTTON:

There has been some doubt in my mind as to which method of operating in the finishing department is the most efficient and brings about happier relations with the workers, the single-job or the multiple-job operation of the employees. That is, is it better to have each operative do only transfer work, another to do the ticketing, another for banding, etc., or is it wiser to have each operative complete the job of transferring, ticketing, banding, boxing and labeling on a lot of goods?

If you use the single-job method, is it better to rotate the operatives and let one girl transfer awhile, then do the ticketing, and then handle the banding, etc., remaining on each job about two weeks, or is it better to keep her on the one job all the time?

If you are in favor of the single-job operation, where the operative is subject to more (or less) fatigue, how do you arrange for the rest periods? What is the comparative efficiency of each method? How are the employees paid when either of the methods is used?

CONTRIBUTOR NO. 6937

Cause of Crooked Seam?

EDITOR COTTON:

On some of the stockings made on full-fashioned machines there is a crooked and zigzag seam down the back of the welt after the stocking has been finished. What are the causes of this condition and how may it be improved?

CONTRIBUTOR NO. 6956

Chute to Convey Goods

EDITOR COTTON:

We have a very simple arrangement at our plant for getting the goods from the knitting room to the looping department. We call it a gravity conveyor.

Our knitting room is located on the first floor and the looper room in the basement, directly under the knitting room. We have simply made a chute out of pine wood leading from the knitting loom to the looper room.

The goods are bundled in bags, 10 dozen to each, and placed in the chute so that they slide down into a bin in the looper room, where they are removed and distributed to the loopers.

This transferring of the goods from the knitting room to loopers formerly required about two hours of a man's time to carry the goods to the elevator and take them downstairs after bundling them, but now it hardly requires any time at all. As a matter of fact, the chute has been so successful leading from the knitting room to the loopers that we have made one leading from the loopers to the dyehouse.

Of course, the wooden chute was painted with shellac so that the goods would have no chance to be snagged.

The chute will pay for itself within two weeks.

CONTRIBUTOR NO. 6950

How Do You Size Full-Fashioned Hosiery?

EDITOR COTTON:

This question has reference to sizing of full-fashioned hosiery. What in general is considered the best system, to count the stitches by using a glass or to yardstick the leggers? And on the foot sizing, is it better to use the glass or use the ruler by marking the needles and counting the courses while the machine is in operation?

In a plant that is air conditioned, what is the most efficient method of sizing where direct knitting is employed? That is, the yarn is out in the open and comes directly from the yarn boards into the machine. Naturally this discussion applies to the method of keeping unevenness as to length at a minimum.

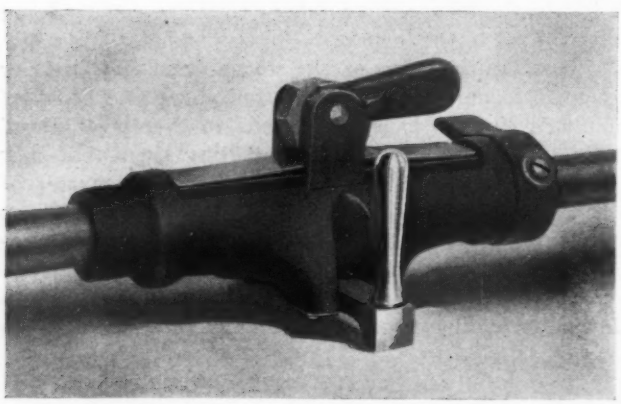
CONTRIBUTOR NO. 6952

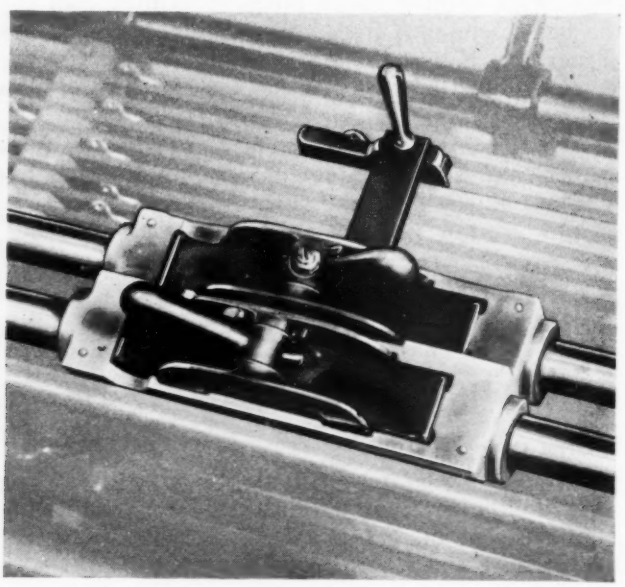
Care of Full-Fashioned Frictions

By Erskine Root

FRICTION BOXES, and the attached auxiliary equipment, are very important functioning parts of a full-fashioned hosiery machine because every course of the carrier rod depends entirely upon the proper action of the friction movement at all times. A simple thing in writing but important in fact. When a friction fails to perform its allotted duty, it means loss of time to the operator and often loss of production and money to the firm because of the ensuing damage which sometimes is the result of permitting frictions to reach a stage where they are mechanically unsafe.

During the course of a year there are many superfluous ills which afflict a machine and which if traced to the source could be laid directly on the threshold of faulty frictions. On numerous occasions though, it is the human element that fails to recognize certain warnings that a friction has reached the end of the trail as far as its usefulness is concerned. And they do reach that stage, all too soon in many cases.





Above, old style single shaft friction box. Right, Duo friction box of the new type. Courtesy Textile Machine Works

Tight Frictions

At this point it might be appropriate to stress the point that operators should be taught religiously the fact that frictions are just as important as the lining and spacing of needles. Usually, an operator knows that when a friction slips it means broken needles and bent and damaged sinkers. If a friction becomes too tight, he eventually realizes that this is detrimental to good operation. He should have been taught this at the outset and impressed with the fact that learning by trial is an expensive proposition both to himself and everybody concerned.

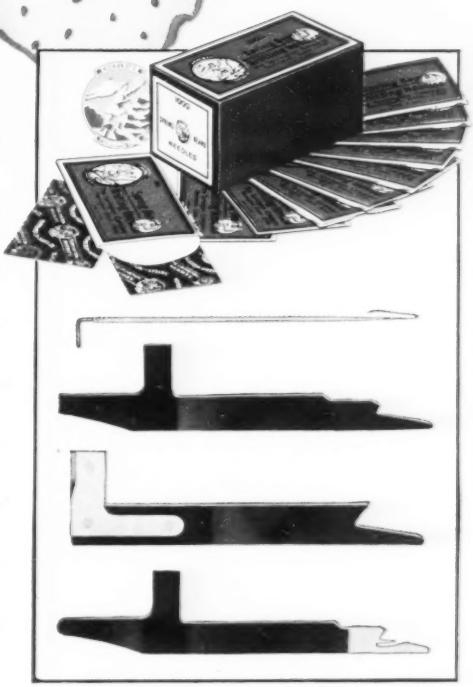
There is no question but that tight frictions cause an undue strain upon the coulier motion and if permitted to become tight to the point that they bind excessively upon the friction rod there is great danger that their unsound action will be the medium of one of the draw arms breaking. In this inordinate state they are also instrumental in causing excessive wear and tear on the pins and bearings that constitute the coulier assembly. Irrespective of broken parts, the replacement of bushings and pins is a costly proposition—and the procedure might have been avoided by timely precautions.

Extremely tight frictions have a latent tendency to wear out the box and rod at the point of contact with each other, especially when either one has begun to deteriorate to the extent there is open space between the rod and box. The tighter the friction the harder it presses against the rod, which is only quite natural, but the box is also forced against the rod to a much greater degree than normal, and as every box has direct contact with the rod, regardless of the angle or shape of said rod, this immoderate pressure is severely harmful to both. Only the cost of replacements tell the true story and at that, there are occasions when we may not realize that tight frictions are at the bottom of the trouble. That is just another reason why the operator must be instructed in the best method of caring for his frictions.

There is a weak spot in most of the cast parts on a knitting machine including the draw arms. When frictions are allowed to run tight for a period of time it is this one weak spot in the arms the strain attacks. The day of reckoning comes and the arm parts, ofttimes making it necessary to replace many

"SHIMMERING SHEERNESS"..."LUSTROUS SLEEKNESS"..."ELASTIC STRENGTH"

...are typical phrases used by manufacturers in promoting the sale of women's hosiery. These phrases must have the ring of truth—for women buy hosiery today more carefully than ever before, expect more sheerness and more strength for their money. Improvements in machines, materials and other knitting equipment have made a combination of these qualities possible. Torringtons have played their part and will continue to play a greater part as quality standards in hosiery are raised still higher. For Torringtons have *machine-made* strength, fineness of finish and uniformity of temper. Use Torringtons and enjoy that extra measure of efficiency and economy they bring to your production.



TORRINGTON *Needles and Sinkers*

6.8% said* "TORRINGTONS LAST LONGER"

A GROUP of mill men who are regular users of Torrington Needles were recently asked "Why do you prefer Torringtons?" The independent research organization which conducted the survey in which this question was asked reports that 6.8% of the group replied, "Because they LAST LONGER."

Most of the replies were of a more general nature, such as, "because they give better service". . ."because they give better results". . ."because they have proved best." These replies indicate the high regard with which Torringtons are held in the industry, but they are not as definitely convincing as "they last longer." That such critical buyers are using Torringtons because "they last longer," is a tribute to the machine methods that produce these needles. Take advantage of the long life Torringtons offer. Use them not only to keep your standards of quality up, but your costs down. Torringtons are machine-made entirely to give you that extra margin of efficiency and durability that mean low needle costs.

Torrington Needles are made by special machine methods which assure greater uniformity in every detail that counts in securing the most consistently uniform results in knitting and smooth operation of knitting machines.

*** MILL MEN'S REASONS FOR PREFERRING TORRINGTON NEEDLES**

Proved Best	18.2%	High Quality	12.5%
Best Service	17.0%	Better Temper	9.0%
Best Results	15.9%	Last Longer	6.8%
Most Uniform	14.8%	Economy	2.3%
Best Made	13.6%	Smooth Finish	2.3%
Most Satisfactory	12.5%	Miscellaneous	11.4%

Many of the knitting mill executives surveyed gave more than one reason under the above classifications for preferring Torrington Needles. As a result, the figures for the entire list total more than 100%.

"THEY LAST LONGER" means that mill men have found that Torrington machine-made needles have an extra degree of stamina that enables them to stand up better under the grueling strain of modern high speed knitting methods.

THE TORRINGTON COMPANY, TORRINGTON, CONN., U. S. A.
Established 1866

The Torrington Company . . . . 1640 Fairmount Ave., Phila., Pa.
The Torrington Co., Inc. . . . . 200 Fifth Ave., New York, N. Y.
The Torrington Company . . . . 538 South Wells St., Chicago, Ill.
The Torrington Company . . . . Guilford Bldg., Greensboro, N.C.
The S. M. Supplies Co. . . . . 210 South Street, Boston, Mass.
Bielock Manufacturing Co. . . . . 913 Locust St., St. Louis, Mo.
E. G. Paules . . . . . Bendix Building, Los Angeles, Calif.
The Torrington Co., Ltd., . . 137 Wellington St. W., Toronto 2, Ont.

Factories at: Torrington, Connecticut . Orange, Massachusetts
Upper Bedford, Quebec . Coventry, England . Aachen, Germany

TORRINGTON *Latch Needles*

new sinkers, needles and carrier tubes. The parts that are bent during the upset and straightened out with pliers are never the same, for it is practically impossible to get the kink out of a sinker that has been ravaged by a carrier, with the ultimate result that with every impelled motion of that particular sinker it more or less saws out the groove in the head in which it is inserted. These tight frictions also force the carrier tube against the outside sinker at the end of each full stroke, both sides of the machine included as a general rule. It is a fallacy to set the carrier rod stud to facilitate this evil under these circumstances for though the trouble might be eliminated in one place it is still present where it is not so noticeable until something dire occurs. Let us not forget the inescapable fact that tight frictions cause untold wear and tear that must finally come out of the profits and directly it is the duty of the operator to be on his toes, continually on the watch for this sort of improper functioning.

Loose Frictions

Whereas a tight friction will apparently work correctly at times, the exact opposite takes place when one becomes too loose. It usually permits the carrier rod to bounce at the end of each stroke or slip to the extent that the sinkers travel forward faster than the carriers are moving. In other words, the loose friction loses momentum, allowing the slur cocks to achieve a faster pace than the carrier rod to which the friction is locked. Normally, the first sign that a friction is loose and on the verge of causing real damage is the bad selvages encountered on one or more sections of the machine, regardless of what part of the hose may be in the making. The sinkers overhaul the carriers right at the end of the stroke, allowing the yarn to ride over the nose of the inside sinker at the carrier delivery terminal. This should be sufficient warning that something is radically wrong and if not heeded immediately the resultant effect may easily be a bad smash. If the sinkers catch up with the carriers during any part of the regular driving motion, it not only means the loss of a set but probably many broken needles and sinkers. While the sinkers might not actually break in many cases, they are ruined beyond repair and must be replaced.

A friction may seem tight when pushed with muscular power but at the same time be loose under direct operating conditions. This is primarily the result of leather that is burned out or glazed, and no longer practical for use. What usually transpires in this case is the "kicking out" of needles by the aforesaid inside sinker. It can be readily determined if the leathers are at fault by extracting the plates and examining the leathers for hardness and glazed surface, both of which will cause the "kicking out" of needles.

Lubrication of the Frictions

There are quite a number of versions as to what constitutes the ideal lubricant for frictions but what we are most interested in is something that will preserve them for the longest period of time with the best operating possibilities. It is a matter that rests entirely in the hands of respective managements but there is no doubt in our mind but that certain lubricants give better results than others. What we must have is something that will ease wear and at the same time permit an easy but holding movement of the friction. Castor oil has been widely used but it has its draw-backs, the first of which is the fact that it hardens the leather prematurely and forms a glaze that has the appearance of glass. When this happens it is only natural that we have no more friction; we have nothing left but a binding force that while it apparently does the job, it wears the draw assembly unnecessarily. With castor oil in use frictions must be tightened up continually to keep them working efficiently. With this ingredient a friction will slip without a moment's notice, due to no fault of the operator. The continual use of it also leaves its mark in the gummy substance it forms as it dries out, necessitating the removal of the entire friction so it can be thoroughly cleaned. The writer is of the opinion that castor oil is not the most satisfactory lubricant as far as hosiery machines are concerned.

Neat's-foot oil is also used extensively but it too has its bad features, the worst being that while it may keep leather soft and fairly pliable, it will cause the friction to bind if not used cautiously.

There is a certain fish oil that was recently recommended to us but it had the opposite effect of neat's-foot oil. It would keep the leathers soft but there was no telling when a friction would slip, even when the leathers had been newly installed. It was too uncertain.

Many things have been tried on frictions but we shall go back to last year for this method. We believe it was A. J. Cobert who suggested it in one of his articles on the maintenance and fixing of full-fashioned hosiery machines, published monthly some time ago in COTTON. Leathers should first be soaked in neat's-foot oil and after installation in the friction, nothing is used except a small amount of lamb fat daily. This creates friction that holds but at the same time lets the rod continue its journey easily at the end of each carrier rod movement.

A short time back we had a conversation with the superintendent of a large mill and we asked his opinion on the subject. To our amazement he informed us that he used nothing but pure petroleum jelly but that the leather had to be treated first before this was advisable. This particular friend also told us he had such treated leathers in as long as two and one-half years. He kept a record of every time a new friction was installed, or leathers renewed, which is a very good idea. Every six months all friction leathers were removed and scraped and it was very seldom that it was necessary to overhaul one during the interim.

The "Knitting Kinks" department of "Cotton" is open to all. If you have a practical problem, send it in to the editors. Also, if you can answer the questions asked by contributors, your opinions will be welcome.—The Editors.

Handy Machine to Weigh and Zone Small Lots

EDITOR COTTON:

We are now using a machine in our shipping department that is proving to be a great time-saver in shipping out small lots of goods by parcel post. Very often we get orders from our customers for only a dozen or two hose and these are mailed in our regular boxes, done up according to postal regulations.

This machine is practically automatic in giving the exact amount of postage necessary to send the package. The package is simply placed on the machine, which weighs it, and the operator punches a button corresponding to the zone to which the package is to be shipped, and the operator can read the amount of postage off on a lighted area. In other words, the machine zones and weighs the package and indicates the amount of postage.

This has cut our time in mailing out these small lots of hose a great deal. Formerly, we had to go to the postoffice, pass the packages through the window and wait while the clerk weighed and figured the zone, then he would pass them back out the window and we placed the stamps on the packages.

The machine requires only a little space, being 22 inches wide and 14 inches high.

It also may be operated simply as a scale for weighing, and we use it to weigh dozen lots for checking purposes.

By having this machine at the mill, our man that formerly spent most of his time at the postoffice can do the work much quicker and is thereby released for further duties at the plant.

CONTRIBUTOR NO. 6948.

An Eye on the Knitting Mills

Kain-Murphey Corporation, Chattanooga, Tenn., is the name of a new plant which has purchased the equipment of the Chickamauga Knitting Mills. J. G. Kain is president and treasurer and William Murphey is vice-president and secretary.

Wiscassett Mills Company, Albemarle, N. C., has installed a modern special package dryer of the Philadelphia Drying Machinery Company. The dryer has stainless steel trays. Other equipment recently purchased includes two extractors of stainless steel, fitted with a timing device connected with hydraulic brakes. Machinery was placed by F. W. Warrington Company, Charlotte, N. C.

Thomas J. Wallner, president of the Wallner Silk Hosiery Mills, Inc., Pulaski, Va., has announced that he will build shortly the second unit to his local plant. It will have 20,000 square feet of floor space and will be two stories high, containing 26 full-fashioned hosiery machines.

Westfield Knitting Mills has leased 10,000 square feet of floor space in the No. 7 mill of the central division in the Amoskeag Mfg. Co. plant, Manchester, N. H. The firm is moving to Manchester from Westfield. The company manufactures knitted worsted sweaters, coats and bathing suits.

The contract for the new finishing plant of the Liberty (N. C.) Hosiery Mills was let to Fiske-Carter Construction Company. The finishing plant is to have modern glass block construction, will be air conditioned, and equipped with fluorescent lights.

Interstate Hosiery Mills, Inc., Lansdale, Pa., will close its mill at Westmoreland and Hancock Streets, Philadelphia, because of unprofitable operations. Machinery not belonging to the company will be moved, but the remainder will be undisturbed.

Samuel G. Camann, Laconia, N. H., has announced that he is in search of a suitable location for the establishment of a new hosiery mill. The investment will probably be about $650,000.

A new hosiery mill will be started at Saluda, near Columbia, S. C. It is financed by a group of Saluda business men. Machinery will cost about $45,000. The plant will be exempt from city and county taxes for 10 years.

The Dalton (Ga.) Plant of the Real Silk Hosiery Mills has installed a number of new full-fashioned hosiery machines, and it is expected that other machinery will be added later.

Hockman & Leatherman is a new hosiery mill established at Perkasie, Pa. Other new mills at this place are the Lewis Hosiery Mill and the Moreck Hosiery Company.

A charter has been granted Williamsport Hosiery Corporation, Annapolis, Md., with an authorized capital stock of $50,000.

Collegiate Hosiery Mills, Philadelphia, have purchased the entire plant of the Lowell (Mass.) Hosiery Mills, Inc., and will re-open and operate it.

Dexdale Hosiery Mills, Lansdale, Pa., have installed 30 Wildman full-fashioned machines in the modern $100,000 building.

It is understood that V. Cadorette of St. Hyacinthe, Quebec, is contemplating the establishment of a hosiery mill at Quebec City, Quebec, Canada.

It is understood that the Chappels (S. C.) Full-Fashioned Hosiery Corporation, recently organized, will manufacture, dye, and finish hosiery.

Ermine Hosiery Company, Inc., South Langhorne, Pa., has been established with Max W. Pfau as president, to manufacture full-fashioned hosiery.

Eader Textile Corporation, Highfield, Md., is a new concern capitalized at $50,000 for the manufacture of knitted outerwear.

It is reported that the Archer Hosiery Mills, Columbus, Ga., will enlarge the plant and install new and modern full-fashioned knitting equipment.

The Telford (Pa.) Hosiery Company was recently organized to manufacture full-fashioned hosiery.

Meinig Hosiery Company, Reading, Pa., has been sold at a trustees' auction for $91,000.

Shannon Hosiery Mill, Columbus, Ga., a new plant, has installed nine 45-gauge machines.

TRENDS and HIGHLIGHTS of the KNIT GOODS MARKETS

Outlook For Hosiery And Underwear Trades Good—Mills Busier Than This Time Last Year By Wide Margin—Pressure To Get Delivery Of Fall Goods Before Wage Change—Underwear Plants Finish Lightweights Late Affecting Heavyweight Season—High Level Of Silk Makes Further Price Advance In Full-Fashioned Probable—Retail Sales Improve

Philadelphia, August 16, 1939

INDICATIONS are women's full-fashioned hosiery prices named by manufacturers will advance again in view of the snapback of raw silk after its short-lived drop that developed when the United States made its announcement regarding the Japanese trade treaty. Manufacturers of these lines declare that with most dependent upon high priced silk for fall lines they cannot come out with prices at a level proportionate with the $6.25 to $6.36 per dozen base for branded. Business in seamless hosiery is showing nice expansion both in anklets and women's lines with production above a year ago. In underwear some mills are turning out about one-third more than this time a year ago and delivery delays are now making their appearance. Prices are strong.

Full-Fashioned

After some curtailment in June and July, not extensive in the industry as a whole but substantially so in Philadelphia, these knitters are now swinging back into full time production and they will continue on this basis or more for the balance of the year or at least until holiday goods are out of the way in December. Mills in Philadelphia are working at 70 per cent now whereas a month back they were at 60 per cent, with some being full time and others around half but now the latter are booking fall goods orders so that they too will shortly be on full time. Most of them have little cheap silk and must buy at current high levels, making it apparent that soon higher prices for their goods must come even if this does disturb retail price brackets. Some retailers show a rush disposition to cover these goods for fall but on the whole large department stores in Philadelphia and New York are buying sparingly as usual. Retail sales of hosiery have been fair to good. Spot lots of full-fashioned that a month ago were disturbing and making price advance impossible to get in many instances are being rapidly cleaned up so that the market is on a firmer price basis as well as being much more active, which is seasonal.

Half-Hose

Increased importance for men's short hose called slacks is indicated for fall with predictions being made that such types will account for about one-third of the total this season. Retailers have promoted these short socks which are self-supporting with their elastic tops and they have had such very good results over the warm weather weeks that they plan to give the consumer something along the same lines only in heavier material for fall and winter. There were over 5,000,000 dozen pairs of slack socks and crew socks shipped out during the first half of this year which are not included in the half-hose statistics released by the National Association of Hosiery Manufacturers. They are classified with anklets in their figures so that if the slacks are totaled with the half-hose in their data it means that there has been fair business all the time in men's half-hose but that the demand is being separated into the regular length with the short socks taking more and more of the business all the time. Some slacks in wool will be on the market for cold weather but local dealers do not believe they will sell when cold weather comes.

Seamless

Women's seamless stockings are selling fairly well and manufacturers making such lines are working about at the same rates as a year ago except possibly in silk. Some business has switched over to rayon on account of high silk prices. Improvements in manufacture are taking the consumer eye and expanding sales such as the two-way stretch for seamless (heretofore only on full-fashioned). One New York store advertised the two-way seamless at 69 cents per pair and did well with them. Chain stores selling rayon seamless say demand is good from the lower income families of the country and those on relief. The consumer is coming to realize that seamless hosiery now means something much more attractive, better fitting and better wearing than it did a few years

Flattering chiffons of Luxuria crepe—Holeproof Hosiery Co.

back due to the improvements that American machine manufacturers have made in seamless equipment. Some seamless now gives almost as good appearance as full-fashioned for less. Anklets are in good demand and especially those for children, numerous mills reporting advance buying for the spring season of next year.

Underwear

Up until the last week or so underwear mills have been rushed on lightweight garments or sports wear of which there has been the largest volume ever. Now these mills are swinging over to the production of heavyweights and with many averaging 35 per cent busier than a year ago there are signs that the underwear industry will continue active and at the end of the year report having the best of any recent year in respect to volume. Prices have not kept pace and although mills are busy they do not make money so that for the next spring there will be more attempts by the mills to get prices of goods on a more profitable basis. In fact, some manufacturers have already withdrawn lines of heavy fleece ribbed coats and re-priced them higher and it is known that other manufacturers are considering the same thing. With wages to go up and with cotton yarns firm there is no other course and goods buyers will have to meet it. Underwear of this type has been too cheap for a long time so far as mill prices go and they must go to a level where manufacturers can offset their higher costs. The late lightweight season makes it late for the mills to swing over to heavies and there may be some late deliveries. Plans are being made for a still larger season next year in knit sportwear made by underwear machinery in view of the unusually large season they just had. The collar type polo shirt was an outstanding item. Within the last few days one maker raised prices on cotton fleeced coats 37½ cents per dozen, covering, the mill said, only yarn cost increases and not under the Wages and Hours Act.

FORECAST

(Opinion submitted by COTTON'S market correspondent.)

Philadelphia, August 16, 1939

Action of the primary textile markets over the last month confirms predictions that the industry will enjoy an active period during the latter half of the year, probably larger than the first half. Taking part in this improvement will be both hosiery, underwear and outerwear. These assertions cover volume but profits are a different matter and while some mills are going to make the best profit showing for years others will have a difficult time because selling prices lag so far behind increased cost of yarns and labor and tax overhead.

Buying is not going to be far ahead although it is going to be less hand-to-mouth than during the previous year. In fact, this is already apparent in some lines, knitters, for example, buying cotton yarn further ahead than for two years but on the whole the expansion is going to be conservative and for this reason less likely to be followed by any downswing such as in 1937. In fact, as manufacturing activity expands commodities have been declining which is in contrast to 1937.

Getting down to commodities used by knit goods mills it is apparent that not much lower prices can be expected this year. Silk has had its minor fluctuations but it always goes back close to the top and there is nothing to cause this commodity to go a great deal lower. Still we do not feel that it will go a lot higher so that there is no urge to speculate in it ahead too far. Cotton is steady and will remain so unless the Government would do the unexpected and let some loan cotton go at less than it was put in the loan at and this will not be done. Cotton outside the loan is firmly held and strong.

Wool has been strong and while not quite so active it is apparent the new clip has passed entirely into dealer and manufacturer hands so that it is strongly held and wools must, of course, be imported. With armament needs in the picture there is no chance of wool going off much. In rayon demand is expanding and it might be some time in the fall some advances might come but these will not be large enough to worry.

Retail business is fair and will become better. Inventories with retailers and all down the line are in fair to good shape so that the outlook is sound. There may be some easing in activity of business at the end of this year because 1939 has been an active production year and yet it is not felt that this expansion has been used to build up stocks. Rather it has been to bring these up to a more normal basis so that there will be no letdown of business as we had early in 1937 and manufacturers this year will have inventory gains rather than losses.

Wage Scales Fixed for Hosiery Industry

The first wage order setting a minimum higher than the 25 cent an hour prescribed under provisions of the Fair Labor Standard Act was announced August 14 when Wage-Hour Administrator Elmer F. Andrews approved the unanimous recommendation of the hosiery industry committee for a 32½-cent an hour minimum for the seamless branch of the industry and 40 cents an hour for the full-fashioned branch. The wage order to be effective nationally on September 18 under the act has all the effect of law. It is estimated this minimum will result in hourly wage increases for approximately 30,000 workers in the seamless division of the industry and approximately 16,000 workers in the full-fashioned division. These estimates are based on statistics obtained from the Bureau of Labor Statistics.

In announcing his decision Mr. Andrews made the following statement: "I have decided to approve the recommendation of industry committee No. 3 for the hosiery industry and to make the minimum wage order based thereon effective September 18. The hosiery industry committee unanimously recommended a minimum rate of 32½ cents an hour for the seamless branch of the industry and a minimum rate of 40 cents an hour for the full-fashioned branch of the hosiery industry. A hearing was held on this recommendation and I have found that the recommendation has been made in accordance with law, is supported by the evidence adduced at the hearing, and taking into consideration the same factors as are required to be considered by the industry committee, will carry out purposes of the Fair Labor Standards Act. It appears that September 18 will be a date convenient to the industry for placing this recommendation into effect. I am announcing my decision now in order to give the industry adequate time to plan for the minimum wage schedules. My findings and order will be issued at least fifteen days in advance of September 18."

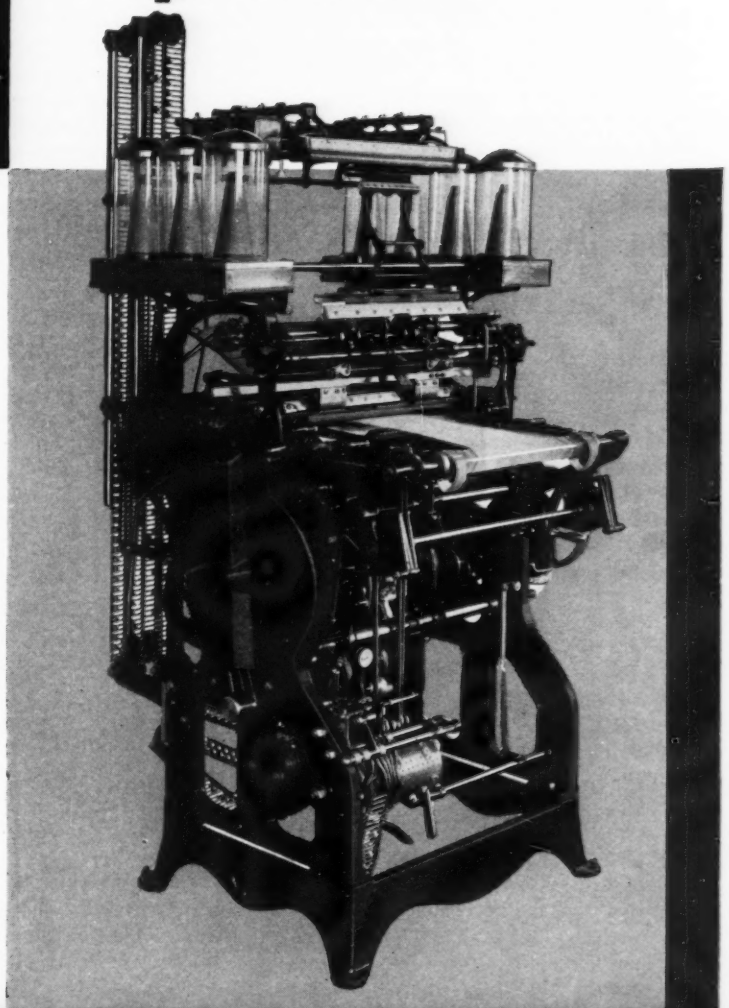
Hosiery Learners Get Lower Wage Rate

It has been announced by the Wage and Hour Division of the Department of Labor that learner provisions have been granted the hosiery industry, permitting hosiery mills to pay 22½ cents per hour to seamless workers and 25 cents per hour to full-fashioned employees; this applies to a 12-week training period and goes into effect September 18, when the standard wage minimums of 32½ cents for seamless mills and 40 cents per hour for full-fashioned plants become mandatory.

The division also establishes a secondary learning period of twelve 40-hour weeks at a higher sub-minimum of 27½ cents for seamless loopers and transfer top workers on a piece rate basis and 29 cents on an hourly rate basis. During a similar period the full-fashioned mills may pay a minimum

Perfect Legs

...perfect feet, perfect matching, all in ONE operation



We suggest immediate investigation and examination of this modern machine by manufacturers interested in making fine-gauge hosiery. Its many advantages and economies will be quickly apparent. It eliminates loss due to the bad matching that is unavoidable when leggers and footers are used. Its product is uniformly perfect, it is easy to operate and maintain. Write for descriptive literature.

WILDMAN MANUFACTURING CO.
NORRISTOWN, PENNA.

WILDMAN
THE WORLD'S STANDARD

The Modern

WILDMAN SINGLE-HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

learner rate of 30 and 35 cents respectively. Still a third classification for learners' rates is the retraining period for workers shifting from one type of work to another, and that is 25 and 29 cents per hour for seamless workers on piece rate and hourly bases respectively, and 30 and 35 cents for full-fashioned workers.

It is noted that while learners shall be limited to 5 per cent of the total number of factory workers (not including sales and office personnel) exceptions shall be made where higher percentage of learners is required in individual cases, but application for exception must be made by employer. However, while the division understands the need for learners, employers will not be permitted to let more learners do the work when experienced workers are available and when applications are made for a greater percentage of learners than stipulated, it is understood.

Determination of learner rates and definitions of learners on various hosiery mill jobs may be secured from the Wage and Hour Division of the Department of Labor, Washington, D. C.

"Ringless" Hosiery Royalty Plan Developing Again

Plans to collect royalties from full-fashioned hosiery mills for the use of three-carrier machine attachments used for the manufacture of "ringless" stockings were outlined in a statement issued by William R. Smith, Philadelphia patent attorney. Mr. Smith is attorney for Julius Kayser & Company and he disclosed the following plan of procedure for the commercialization of the three-carrier invention protected by the Mutchler patent No. 2,161,550:—"Textile Machine Works of Reading, Pa., and Fred C. Good & Sons of Philadelphia, Pa., have made a satisfactory financial settlement and have a license under the Mutchler patent requiring the payment of royalty for each attachment manufactured and sold.

"Additional machine manufacturers are negotiating for a license. The present plan is to offer, for a limited time, licenses to manufacturers whereby on the payment of a stipulated royalty for each attachment manufactured heretofore and hereafter, a complete release may be obtained for the hosiery mills. During this period hosiery mills will also have the opportunity to negotiate direct for a release upon the payment of a stipulated fixed royalty. After the expiration of this period, full and complete legal action will be taken to prosecute all mills that infringe and thereafter the only arrangement that can be made will be the payment of a fixed royalty per dozen of hosiery as manufactured by the three-carrier attachment. The total amount of such royalty will be much more than the amount paid for a complete settlement during the period mentioned."

The Mutchler patent application was involved with numerous interferences in the Patent Office but Mutchler was the successful party in these various contests and as a result, the basis patent claims were granted in the Mutchler patent No. 2,161,550. From this it would appear that there is to be a revival of the "ringless" hosiery question which appeared to be settled after the Federal Court of Appeals in Philadelphia supported a lower Federal court verdict that the Kaufman patent was invalid. Circulars to the trade from Fred C. Good & Sons, Philadelphia manufacturers of ringless tackle, gave the first hint that Julius Kayser & Co. would act to protect its rights under the new patent. The latest patent issued to Arthur Mutchler and assigned to Kayser refers to the attachment for making ringless stockings whereas the Kaufman patent covered the fabric itself.

The Textile Machine Works, Reading, Pa., is licensed to make three-carrier "ringless" attachments under the Mutchler patent but has no intention of collecting royalties on such attachments it was stated by an official of the company. This statement followed the notice that Fred C. Good & Sons had circularized full-fashioned hosiery manufacturers seeking to collect a royalty for use of their attachment of $20 per machine for those equipped subsequent to January 31, 1939, and $10 per machine for its three-carrier attachments installed prior to that date. The Textile Machine Works spokesman declared that it was not the policy of his company to collect royalties for machinery attachments.

City Officials Defendants in Apex Hosiery Case

The Chester County Court sitting at West Chester, Pa., in a decision handed down July 31 refused to release two Philadelphia officials, the president of Branch No. 1, American Federation of Hosiery Workers and that branch of the union of responsibility in the Apex Hosiery Company's suit against the County of Philadelphia arising from the sit-down strike in 1937. The Philadelphia company sued the county for $1,026,000 alleging that much damage was done to its plant by the sit-down strikers and alleging that the county failed to furnish adequate protection. The Philadelphia county commissioners brought Mayor S. Davis Wilson, former Sheriff William Hamilton, Jr., William Leader, president of Branch No. 1, American Federation of Hosiery Workers, the Federation itself and Andrew J. Emanuel, former director of public safety, into the case as additional defendants. They in turn petitioned the Chester County Courts to be relieved liability citing that their offices were not named in the act of 1841 under which the litigation was instituted. The court in its opinion quashed all of the petitions save that of Mr. Emanuel. In speaking of the other defendants the court found the terms sufficiently broad and comprehensive to include all as defendants.

Berkshire Employees Told "Coercion" Near End

"There are evidences all around that the wave of coerced unionism, the unfairness of the NLRB and its one-sided administration of the Wagner Act has just about run its course," Fred Werner, president of the Berkshire Employees Association declared. Mr. Werner, whose organization has consistently fought the American Federation of Hosiery Workers in its various attempts to organize Berkshire employes since the strike of 1936 states that knitters once trying to force unionism upon the mill are now seeking jobs there because of unsatisfactory conditions at union plants. Mr. Werner said: "I know and most of us know that the heartfelt wish of most Berks County hosiery workers is to get a job at Berkshire. Without any fear of contradiction I say the reason for this is because we enjoy model working conditions. Our rates of pay are as high as anywhere in the hosiery industry. Our working conditions are unexcelled. We have splendid sanitary facilities, ample recreational provisions and ever present medical attention and care when needed. But above all this the evidence of the past five years has demonstrated to us that we at Berkshire have enjoyed a marked degree of steady employment and I believe have larger annual earnings than the average for the full-fashioned hosiery industry.

"Our policy has never been one of bluff and bombast, just for propaganda purposes and newspaper headlines but quietly and conscientiously we strive to create better conditions and increased earnings for our members. Another one of our principles has been voluntary membership. No member of the

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Selo assures seams that stand hard wear.

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Berkshire Employe Association can say that he has been coerced into membership or that he must pay tribute for the right to work. He became a member and remains a member of his own free will and the support that he contributes to his or her own organization is similar." In conclusion he said: "We all know that the NLRB hearing was a farce. They smeared us and would not let us find out who and what was in back of it all. But we intend to find out even if we have to go to court to do so."

Finishes on Hosiery Over-Emphasized

A silk hosiery finish alone can improve the basic qualities of a stocking only slightly the U. S. Testing Co. stated in a bulletin, but emphasized a properly constructed hose that is finished in such a way as to make it more pliable and flexible may be made considerably more attractive to the consumer. Commenting on the special new finishes reported during the last eight months and now emphasized in retail advertisements, the Testing House comments that in recent months hosiery has been sold on what finish is used rather than the actual construction of the stocking. It states that a special hosiery finish or the man doing the dyeing and finishing of the hosiery can only maintain or improve upon slightly the basic qualities put into the stocking originally. In other words, if a stocking is not properly constructed to start with there is little a hosiery finisher can do to improve the stocking so that it will give service and wear.

"A hosiery finisher, however, by using the proper finish can maintain all the best qualities put into the hosiery in its construction and improve upon the hosiery by making it more pliable and flexible, lubricating and making threads smooth so that they will withstand flexing and abrasion to give consumers satisfaction. Everyone connected with the textile industry should clearly see the picture that with the economic conditions existing today it is essential that fabrics and hosiery be manufactured and finished to give the greatest wear possible."

Elastic Top Patent on Royalty Basis

The U. S. Patent Office granted claims to still another type of elastic silk stocking and thereby probably set in motion another series of patent controversies that have affected the full-fashioned hosiery industry in recent years. The patent attorney in this case, William R. Smith of Philadelphia, declared that in his opinion the claims granted in the new patent which is No. 2,169,204, "cover all types of fabric now on the market which are connected to the top of a knitted stocking wherein said fabrics are constructed of elastic and inelastic yarns and are capable of one way stretch and two way stretch." Mr. Smith has been active in behalf of Julius Kayser & Co. in the "ringless" patent case.

The new elastic top patent is issued to Edward C. Hinchliff and assigned to Burson Knitting Co. Granting of licenses at a normal royalty rate is planned by Mr. Hinchliff according to Smith who said that if it is to the interest of the hosiery mills he will enter into an agreement with owners of other patents so that the hosiery mills will be relieved of unnecessary litigation. Mr. Smith pointed out that the above claim does not specify any particular type of fabric and therefore in his opinion this claim covers woven fabric, warp knit fabric, lace fabric and the knitting of elastic yarn directly into the hosiery, known in the trade as weft knitted fabric, all of such fabric being made of elastic and inelastic yarns.

Attempts to Offset Higher Silk No Hosiery Cure-All

After numerous expedients in attempts to offset the continued high cost of silk many full-fashioned hosiery manufacturers now feel there is nothing further to be gained in that direction. They are convinced the only solution of their difficulties lies in another price advance. Among the experiments towards cost revision were the knitting of Bemberg welts on popular priced goods, lisle reinforced welts and the use of 20-22 white silk instead of the 13-15s. The use of Bemberg for welts has not proved altogether satisfactory because many buyers have pointed out that the appearance of such stocking is that of a hybrid. Retailers have found also that the customer is inclined to believe these stockings are an all Bemberg product despite contrary statements and advertisements and counter cards.

In respect to lisle reinforcements in the welt it has been noted that the picot in many instances does not stand up as knitted on an all silk welt. Moreover, there is said to be slight savings in the lisle back welt. In regard to the change in deniers it was possible sometime ago to save 15 cents a dozen in the cost of making an average stocking with 20-22 silk. The savings might have been greater had the mills bought the 78 per cent but instead they turned mainly to the 85 per cent and as a result the cost of this type of silk is approximately the same as they would pay for the 78 per cent 13-15s. In this connection it is apparent that in the next few weeks it will be possible to see what effect, if any, the new 85 cent price for base constructions in women's branded full-fashioned hosiery will have upon the retail business.

More Slacks in Men's Hose This Fall

Increased importance for slacks as a fall item in the men's hosiery business is predicted. Jobbers declare that slacks will account for 35 per cent of the total half-hose business this fall. The growing popularity of this short type sock has been an outstanding development in recent months. The National Association of Hosiery Manufacturers points out that shipments of men's half-hose excluding wool for the first six months of 1939 were 13.3 per cent less than for the first half of 1938 and 18.7 per cent less than for the first six months of 1937. These decreases, the association said, may be attributed to the large increases which took place in crew socks and slack socks which are largely worn by men in place of half-hose. During the first half of 1939 there were shipped 5,029,420 dozen pairs of slack socks and crew socks, while the decrease in men's half-hose during this period amounted to 2,137,982 dozen pairs compared with the same period in 1938. These figures indicate that while half-hose production has been smaller this reduction is more than offset when the large amount of crew socks and slack socks is taken into consideration.

Wage Earners and Pay Increases in Knit Industry

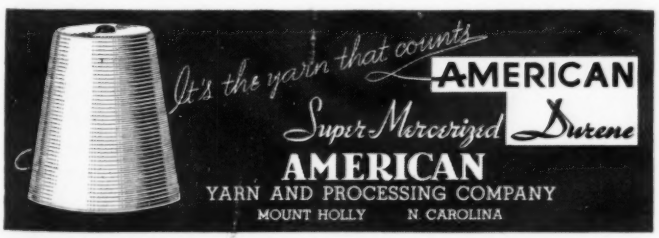
The number of wage earners in the knitting industry increased 5.1 per cent while their wages by 7.9 per cent in the two years from 1935 to 1937 according to the U. S. Bureau of the Census. Wage earners totalled 231,064 in 1937 compared with 219,776 in 1935. Their 1937 income was $199,056,691 compared with the 1935 total of $184,477,787. Value of products totalled $659,974,358 compared with the 1935 total of $606,725,684. The number of establishments for 1937 was 1,821, a decline of 1.7 per cent from 1935. Hosiery was the most important knit goods item. Its 1937 value was $361,575,619 against the 1935 value of $315,187,328. Underwear

. . . *the* RIGHT COMBINATION

It's hosiery filmy sheer, soft and dull, sleek as a second skin. It's hosiery long wearing, resistant to the vigorous doings of active moderns. It's hosiery that meets the clamour for glamour, capitalizes on the mood of the moment . . . yet, resists snags and runs, gives miles more wear. What woman can resist this *right* combination . . . imparted to the highest degree by *DuraBond* Finishes? There's no better way to insure sales successes!

SCHOLLER BROS., INC.

Manufacturers of Textile Soaps, Softeners, Sulphonated Oils, Finishes—Collins & Westmoreland Sts., Philadelphia, Pa.—St. Catharines, Ontario, Canada



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The LANE BASKET

A Favorite of the Hosiery and Knitting Trade

Write for Catalog 126C

W. T. **LANE** & BROS., Inc.

Manufacturers : POUGHKEEPSIE, N. Y.

ranked second with a value of $117,766,627 against a 1935 value of $96,053,530. Knitted outerwear in 1937 was valued at approximately $112,000,000.

Underwear Profits Lag Despite Larger Output

The underwear industry has been benefiting from the important increase in the production for the year so far but the meager information that is available as to actual financial results with much of the industry indicates that manufacturers are not pleased with the financial results. The low price basis at which spring and summer merchandise had to be sold accounts primarily for this disappointment. Also the production was unevenly spread over the first half of the year with the real rush coming late as wholesaler and retailer found they had under estimated needs. Mills have been working under pressure consequently to get out merchandise wanted at once and this irregular production does not make for the best results as to cost. For another spring season to which the industry is now looking manufacturers would like to see first of all a fairer price basis established, pointing out in support of this that cotton yarns are costing them more than earlier this year, that wage scales have been changed already by the Wage and Hour Act and will be even higher within a short time. In view of this recent conservative price advances that have been advanced by several underwear manufacturers can be understood and it is certain that more of these will follow shortly.

Hosiery Marking Rules for Canada

Standard markings for hosiery, the first commodity standards ever set by the Canadian Government were announced July 28 in Montreal by W. D. Euler, Minister of Trade and Commerce. The new regulations designed to prevent misleading descriptions of the material content of hosiery of all sorts were adopted by the Government on the recommendation of Dominion Trade and Industry Commission after conference with the Canadian Woolen and Knit Goods Manufacturers Association. While the new regulations are not strictly compulsory a manufacturer must mark his hosiery products according to the standards set if he marks them at all and some indication of the material content is usually looked upon as necessary. The regulations come into effect as far as manufacturers and importers are concerned next February 1 and others on Feb. 1, 1941.

Additional Personals and Obituary Items

WILLIAM WHITE, formerly with oGtham Silk Hosiery Company, Philadelphia, Pa., has been appointed superintendent of the Wayne Knitting Mills, Fort Wayne, Ind., succeeding JOHN ARCHER, who is now connected with a knitting mill in Sherbrook, Canada.

CLIFFORD P. FLANAGAN has been appointed research chemist and technician at the Virginia Maid Hosiery Mills, Pulaski, Va. He is a graduate of the New Bedford (Mass.) Textile School and formerly was employed as a sampler at the Wellington, Sears & Company selling house, New York City.

G. W. RANKIN has become superintendent of the Richmond Hosiery Mills, Rossville, Ga.

Obituary

JOHN R. BOOHER, 61, for the past 17 years advertising manager of The Cleveland Crane & Engineering Co., Wickliffe, Ohio, passed away on August 15.

J. W. MCELHANNON, 59, passed away at his home in Durham, N. C., on August 19. Mr. McElhannon, a well-known figure in southern textile manufacturing, had held a number of positions in the industry; most recently has been superintendent of the Stonewall (Miss.) Cotton Mills, and previously secretary-treasurer of the Durham (N. C.) Cotton Mfg. Co.

OSCAR H. HAY, superintendent of the Mandeville Mills, Carrollton, Ga., passed away suddenly on August 20, at 57 years of age. He had been connected with the Mandeville Mills for more than 30 years.

SYDNEY RUSHTON BLISS, 59, president of the Bliss Throwing Company, passed away the middle of August at Scranton, Pa.

FRANK L. CARPENTER, former treasurer of the Davis Mills, Fall River, Mass., passed away suddenly during July.

GEORGE E. SCHULTZ, former head of the fabric printing department of the Hampton Company, Easthampton, Mass., passed away during July after a brief illness. He had been active until about a year ago when he retired to act only in an advisory capacity.

J. E. MOAK, overseer of carding at the Hillsboro (Tex.) Cotton Mill for about 14 years, passed away July 25.

CHARLES HARRIS KLUTTZ formerly president of the Klumac Mills, Salisbury, N. C., passed away recently.

Carolina Yarn Association's Outing to be October 27-28

The annual get-together-golf-skeet-etc. outing of the Carolina Yarn Association will be held this year on October 27-28 at the Carolina Inn, Pinehurst, N. C. Activities as usual will consist of golf, skeet shooting and other forms of amusement, including a floor show on Saturday night. The golfers may play one round on any of three days (the hotel will be open for guests October 26) with skeet shooting on the 27th and 28th only. Attendance is by invitation only, and as a large attendance is expected, it is requested that reservations be made as early as possible. S. L. Diggle, Box 578, Charlotte, N. C., is president of the Association.

◆

Shipments of Durene Increase

In reporting shipments of mercerized cotton yarn for the first thirty-two weeks of this year, Dean Hill, President of the Mercerizers Association of America expresses optimistic views on the future of the industry.

Shipments for the four weeks ending August fifth show an increase of 30% over the same four weeks in 1938 and were higher than the two previous four week periods. That shipments in July should show increase over the previous May and June is a very unusual happening in the mercerizing industry according to Mr. Hill. Ordinarily there is a let down in the summer months but the present indications are that shipments will continue at a high rate throughout the summer.

Shipments for the first thirty-two weeks of this year show an increase of 36% over the same period in 1938 and an increase of 18% over the three previous years' average for the same period.

These increases, as stated by Mr. Hill, are due to several reasons. The active promotion of Durene yarns in knitted mercerized cotton underwear, polo shirts, pull-overs and team athletic uniforms is accountable for the greatest increase. According to Mr. Hill, who is also President of the Durene Association of America, those garment manufacturers who have tied up with the Durene campaign by identifying their garments as made of Durene yarn have enjoyed the greatest increase in the use of mercerized cotton yarn.

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Put CONSUMER-APPEAL in your packaging—

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Old Dominion maintains an art and creative staff for designing packages with unusual appeal. Modern trends in design are studied, competitive purchasing analyzed and public acceptance guaged in creating every design. This service is yours without obligation.

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ARE YOU losing sales because your hosiery lacks Glamour-and-Wear? Meet today's demand for hosiery that matches pride and purse with Laurel Hosiery Finishes. They firm and protect the stitches; they increase snag resistance; they permit freedom in action; they help retain glamorous fit and heighten lovely sheer look. Women come back for more Laurel Finished Hosiery.

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Laurel SOAP MANUFACTURING COMPANY, INC.

Wm. H. Bertolet's Sons *Established 1909*
2600 E. Tioga Street Philadelphia, Pa.
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TRENDS—THE YARN MARKETS

Pressure For Yarn Deliveries Increases—Single Combed Deliveries Late And Worsted Counts Also Tighter—Rayon Yarn Consumption Expanding And Outlook Good—Silk Firm After Short-Lived Easing

Philadelphia, August 16, 1939

THE YARN MARKETS WITHOUT EXCEPTION are active and prices steady or firm. This is apparent in silk which had a short drop when the Government announced its new policy on the Japanese treaty but this easing lasted only a few days and then silk creeped upward again reflecting good demand and small supplies which always bear weight. Cotton yarns have been strong because of the scarcity of free cotton outside of the loan and also because there is a good demand and exceptionally large deliveries as manufacturers of underwear and sport shirts have been consuming large amounts. They want yarns in some instances for use next spring. Mercerizers increased prices 2 cent this month, bringing these yarns about back to the level they were before a cut was made late in May, and sellers report demand and deliveries very satisfactory. Worsted yarns are active but mainly on old contracts as outerwear manufacturers swing into production on fall merchandise.

Cotton Yarns

Demand for cotton yarns has been the best of the year and practically all spinners of the better-known types are operating at full-time rates. In addition to this deliveries on old contracts this month have been at a more active rate than any time this year and in some instances such as in single combed there is an actual shortage over the next few months. In view of this situation it is natural that spinners should be holding prices firmly and this has been done although no important advances have been made over the last month but during the same period spot cotton has eased considerably. With raw cotton easier and yarn prices slightly higher over the month this means that spinners' margins have shown the first real expansion in some time and is a step in the direction of placing sales cotton yarn prices on something approaching a profitable basis but in this connection spinners still assert that yarns should sell at one to two cents a pound higher before their margins will be sufficient to show them even a fair profit.

With cotton yarn buyers having the ages and Hours Act in mind they have as a rule been confining their carded yarn purchases to deliveries not later than October 24 when the wage minimum will automatically jump five cents per hour so that neither the buyers nor sellers of carded yarns are anxious to operate farther ahead than that time. This condition does not apply to combed nor mercerized and in these two types of yarns coverage farther ahead has been apparent, contracts up to March, 1940, being noted in several instances and contracts to the end of this year numerous. The reason for this type buying in combed and mercerized as contrasted with that in carded is because wage rates in combed and mercerized plants will not be affected to any important degree by the October 24 change. Demand for all types of yarns has been especially good from the knitting trades and pressure for early deliveries from underwear and hosiery plants is very noticeable.

The first change made in mercerized yarn prices since November, 1937, was made effective August 14 when mercerizers raised prices two cents per pound, bringing the new list to 62 cents for 60s two-ply ungassed which compares with 60 cents for this count in force from late May up to this date. During the three weeks prior to the price advance mercerizers booked a large volume of new business and it can be said now that practically all knitters have some yarn bought ahead to the end of the year. Deliveries of mercerized on old contracts have been at a high rate and predictions are being made that both prices and deliveries are apt to become more of a problem later in the fall.

Silk

Except for a short period at the time the announcement was made by the State Department of abrogation of the trade treaty with Japan silk has been strong over the month with prices at present being about six cents higher than a month ago. When the Government made its announcement regarding the treaty prices dropped rapidly, the decline being approximately seven cents in the two days of trading immediately following the announcement. This decline which later proved temporary was quickly taken advantage of by the full-fashioned hosiery trade, many of which covered their needs for a couple of months and some through October while a few of the largest manufacturers bought for November and December deliveries. Later silk traders realized that the treaty abrogation would probably have no serious effects on the silk industry so that prices quickly began to harden and at the present time silk is selling at prices only a few cents under the 1939 high mark reached July 26. The price of silk on that date was approximately $1.00 higher than the low point reached on January 6.

July mill takings of raw silk in the United States fell below trade expectations, totaling 26,142 bales, which is the lowest monthly consumption total since December, 1937, when approximately 21,000 bales were used in this country. The July figure compares with 26,256 bales consumed during June and with 32,593 bales used during July, 1939. Stocks of silk in New York gained about 6,500 bales to 25,748 bales for July. Supplies in the hands of the Japanese Government were practically nil while stocks in Japan amounted to 19,000 bales, a gain of 6,000 bales over June but still considerably lower than the July, 1938, figure of 67,000 bales.

Rayon

Although producers of rayon yarns are not operating at full-time rates, they are looking forward to an exceptionally good fall season. One reason the industry is not operating at capacity at the present time is because of changes in equipment and the fact that much machinery has been turned over to the production of finer deniers with a resultant drop in poundage output. Some of the smaller plants are running at capacity while larger units are believed to be operating at something slightly above 80 per cent of capacity. American rayon yarn producers shipped in July 32,900,000 pounds compared with 33,000,000 pounds in June and 31,900,000 pounds in July, 1938.

Producers' stocks of rayon yarn at the end of July amounted to 25,000,000 pounds as compared with 32,600,000 pounds in June and 53,600,000 pounds at the end of July, 1938. It is to be noted that stocks in the hands of producers are substantially less than recent monthly shipments of yarn. Rayon yarn shipments for the first seven months of the present year totaled 194,100,000 pounds, which is 48 per cent above the same period last year.

Worsted Yarns

With outerwear manufacturers in the Philadelphia district very busy producing men's and boys' sweaters and coats for the fall season most spinners of worsted yarns are busy. They are booking a fair volume of new business and in some instances are unable to keep up with delivery demands that are being made upon them for the next two months. In contrast to conditions in Philadelphia, New York manufacturers are not very busy and yarn sales in that center have been lagging. Prices have been strong over the month and at present are approximately 2½ cents higher than a month ago, being somewhat stronger than raw wool or tops in the same period so that spinners' margins are widening slightly. Due to the advancing trend in worsted yarn prices demand for all sorts of cheapener yarns such as cotton core, cotton-worsted twist and rayon blends is very good with spinners of such yarns working at active rates.

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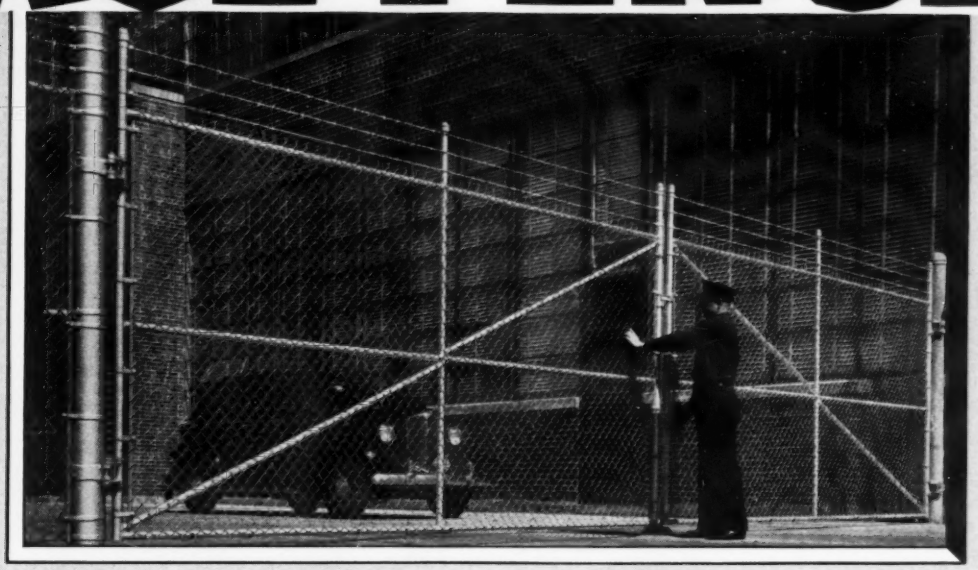

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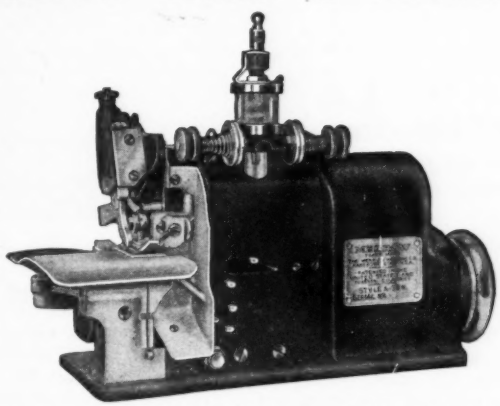

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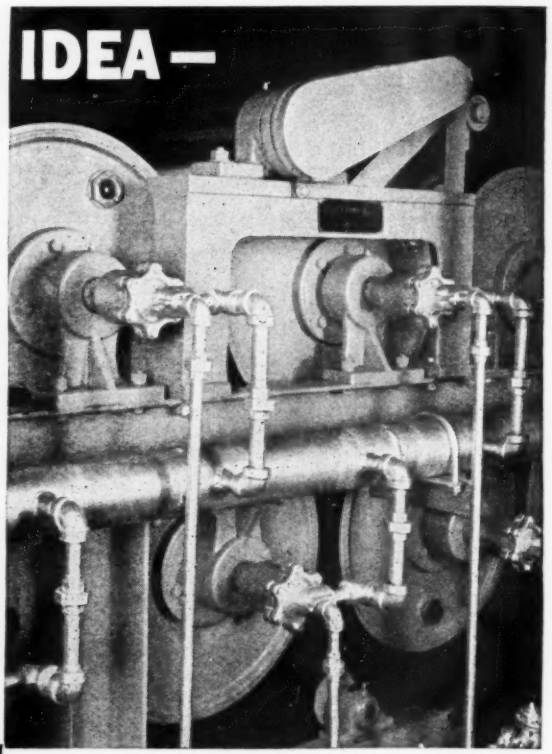

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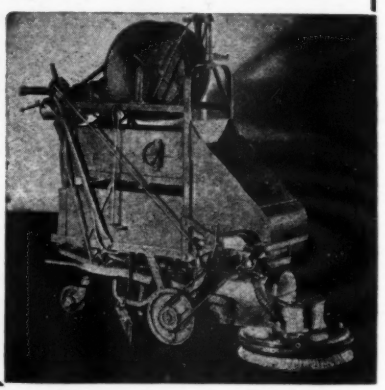

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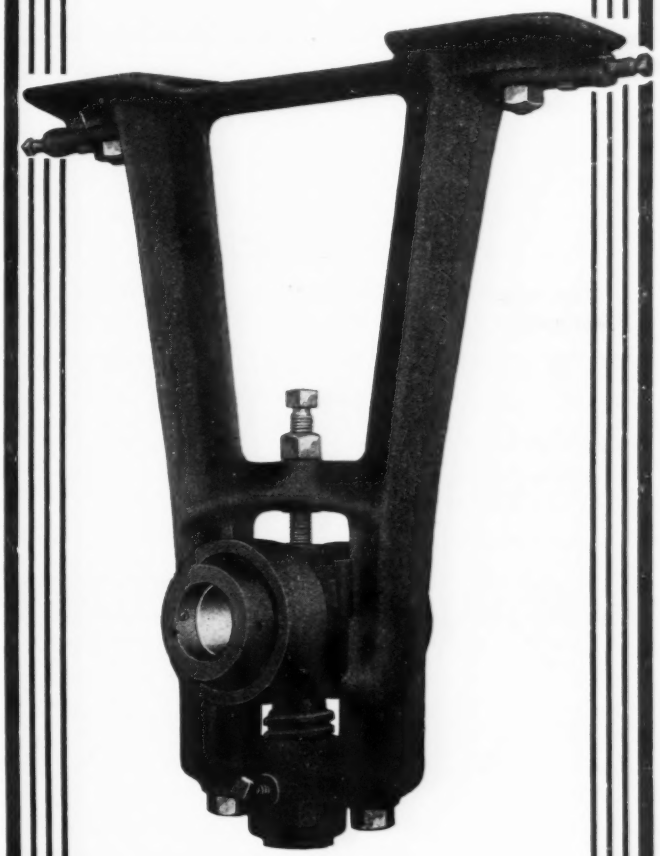

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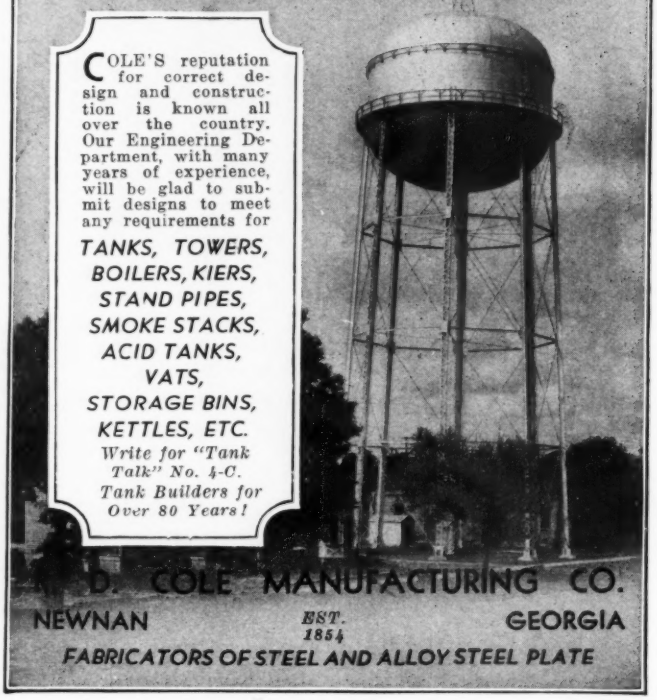

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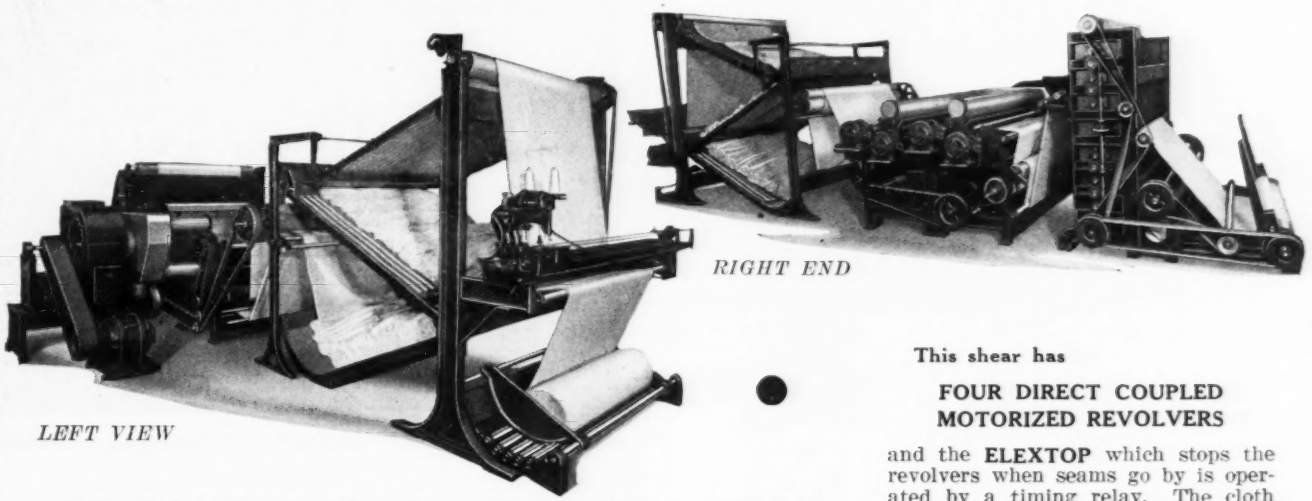

RIGHT END

LEFT VIEW

Cloth roll from loom lays in small scray beneath sewing machine.

When sewed to last cloth end it passes into top of

THREE TIERED CLOTH FEEDING SCRAY

This scray takes one-third the floor space of long open scray and has nearly double storage so it gives operator ample time to keep range running all day.

NO EXPENSIVE STOPS

The cloth then goes through the

SIX CYLINDER DOUBLE ACTING VERTICAL BRUSH

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THE DIXIE AUTOMATIC SHEAR

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This shear has

FOUR DIRECT COUPLED MOTORIZED REVOLVERS

and the **ELEXTOP** which stops the revolvers when seams go by is operated by a timing relay. The cloth runs from 75 to 100 yds. per min., so a small fraction of a second pause by the blades lets the sewings safely through and only a few inches each side of the seam is left unshorn.

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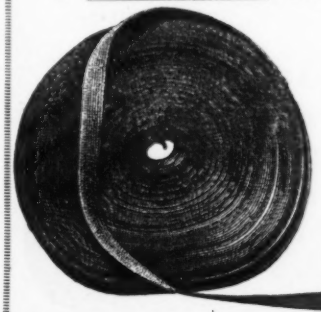

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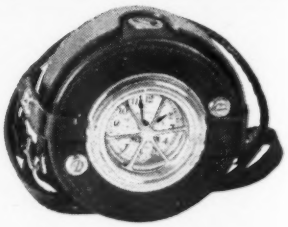

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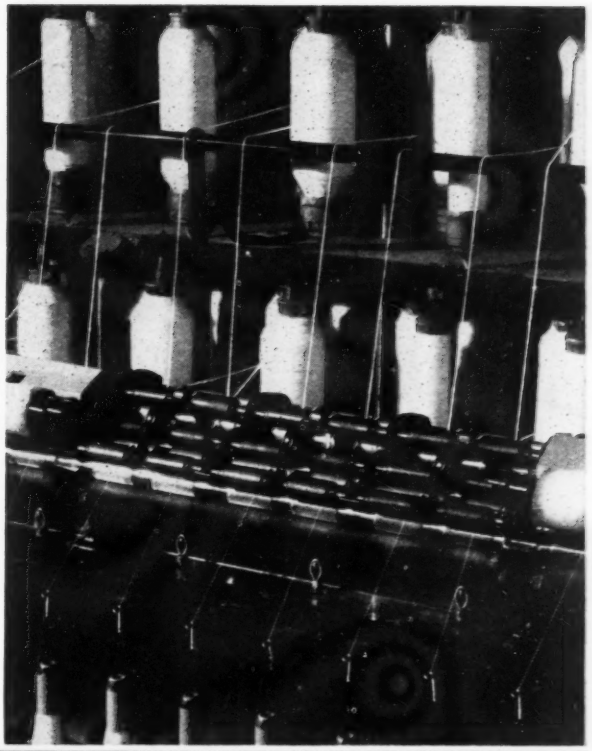

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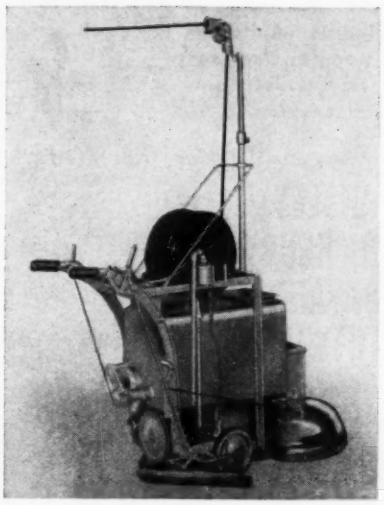

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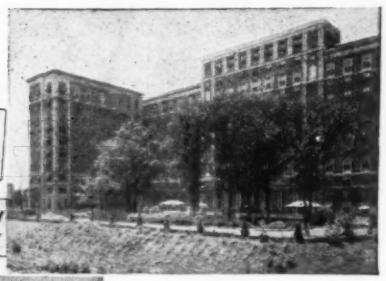

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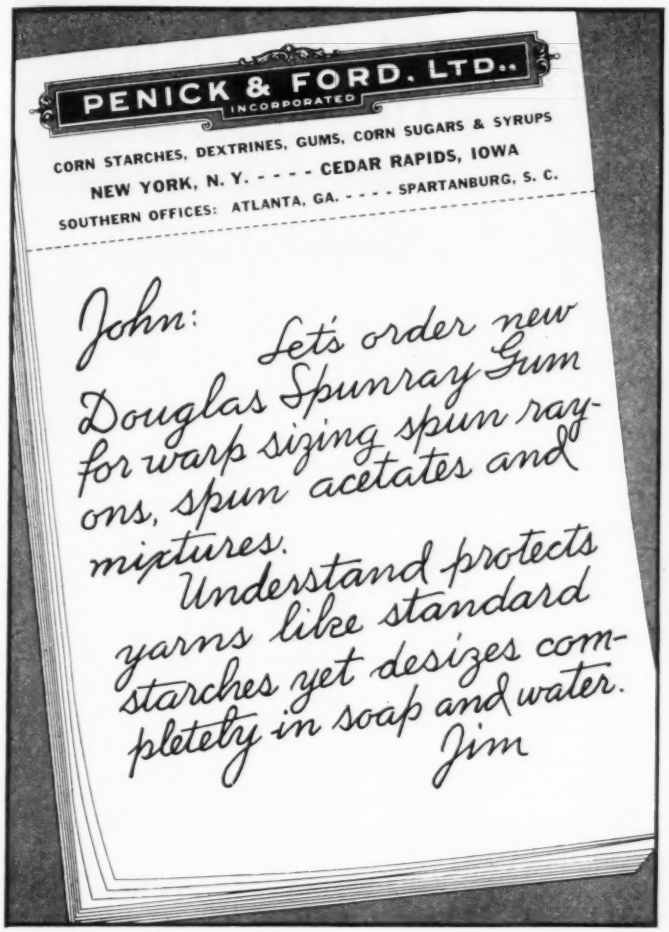
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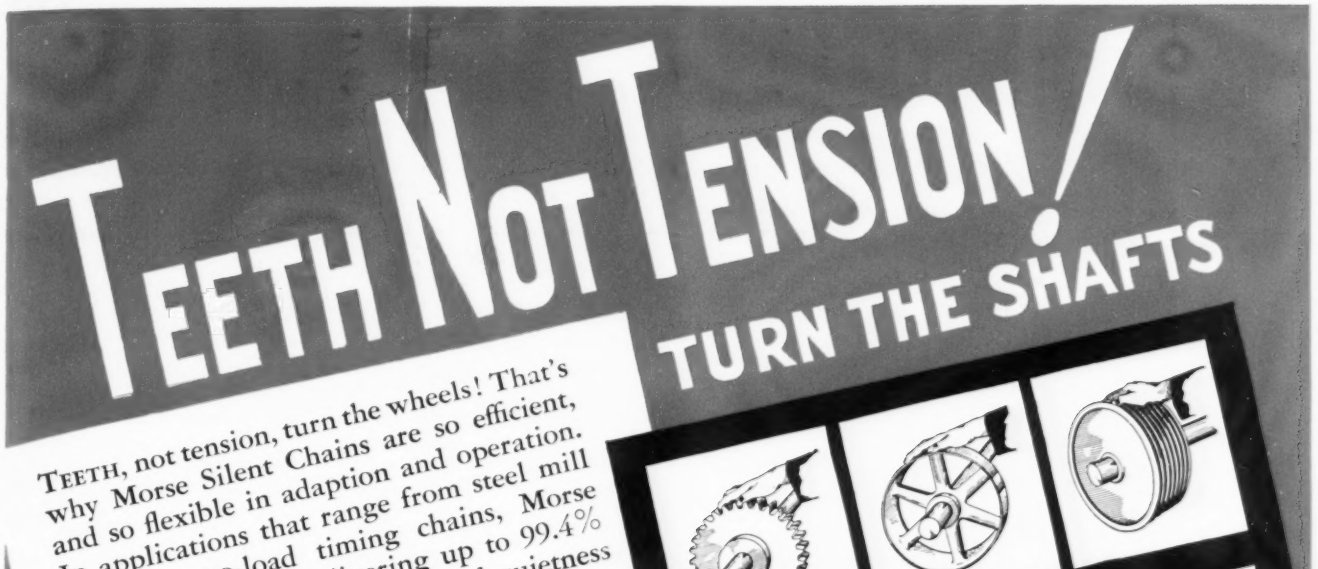

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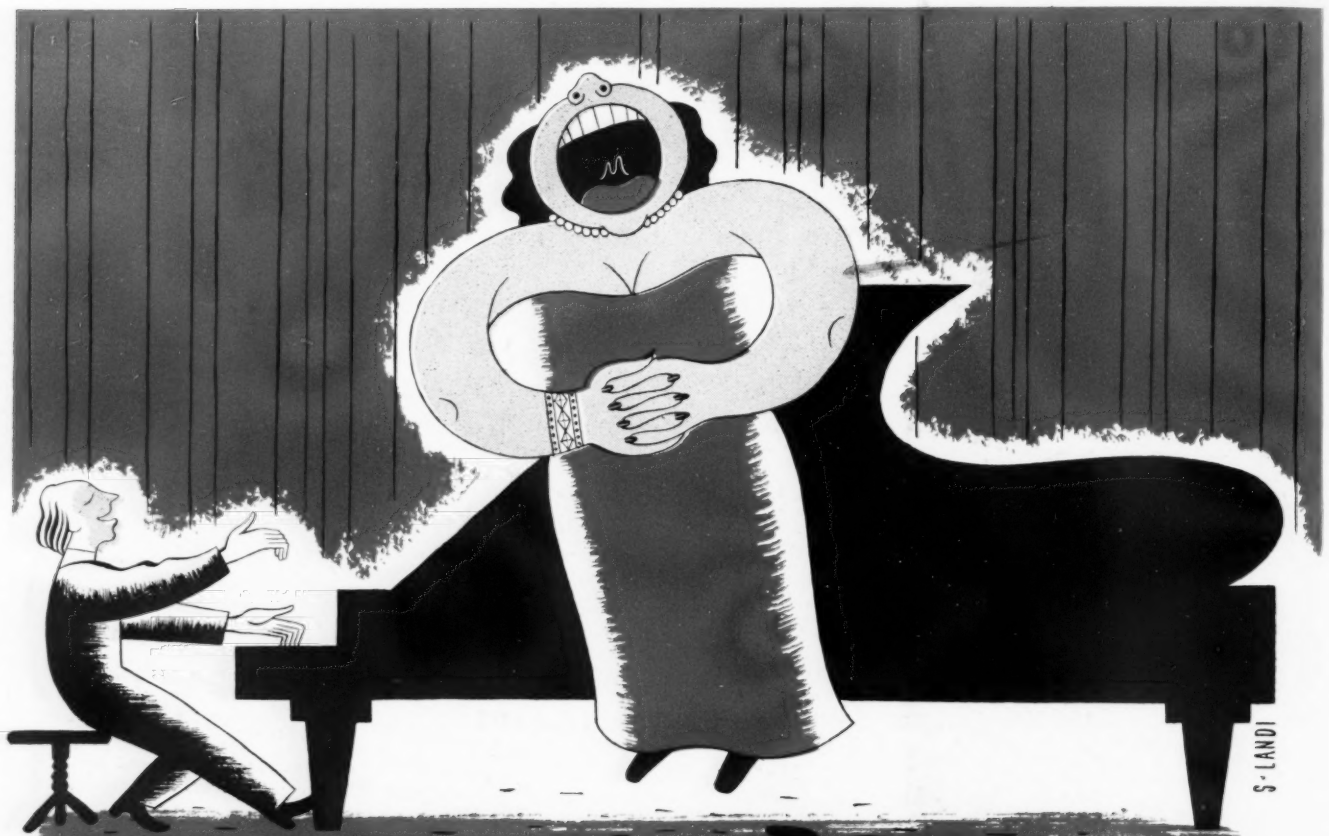

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